

## Eyeing the enterprise

Juniper makes harder run  
at corporate networks; Lucent, Nortel rediscover the enterprise. **PAGE 12.**

## Red Sox get IT relief

Proxy appliance gives  
World Series champs breathing room on T-1 lines. **PAGE 13.**

# NetworkWorld

The leader in network knowledge ■ [www.nwfusion.com](http://www.nwfusion.com)

November 1, 2004 ■ Volume 21, Number 44

### A Wider Net

## Testing your mettle: Zinc whiskers in the data center

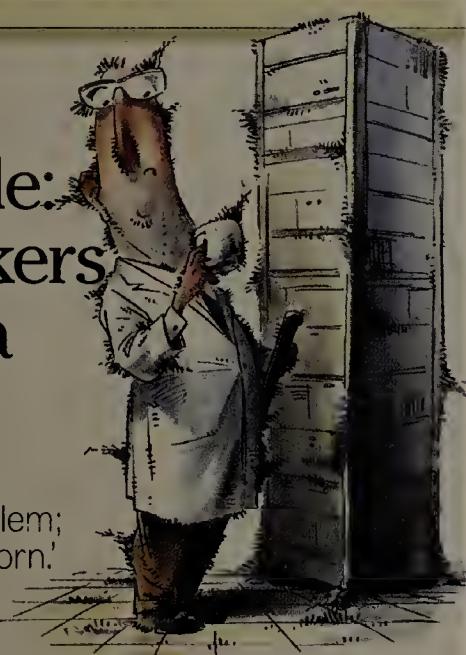
If they're underfoot,  
you may have a problem;  
'It sounded like popcorn.'

■ BY BOB BROWN

It's been more than a year since Wayne Harris and his IT comrades at a Canadian healthcare organization exorcised the little demons, but the memories still haunt them.

"We spent an average of 40 hours of overtime a week banging our heads against walls trying to figure out what the heck was going wrong with our servers," says the manager of technical services for Baycrest Centre for Geriatric Care. "We wondered if we were being sabotaged."

See Whiskers, page 16



DAN VASCONCELLOS

### A CLOSER LOOK: Service-oriented architecture

First of two parts

## Service-oriented hype to meet hard realities

■ BY JOHN FONTANA

Hype alone would have IT executives believe that in coming years service-oriented architectures will be as standard within companies as morning coffee.

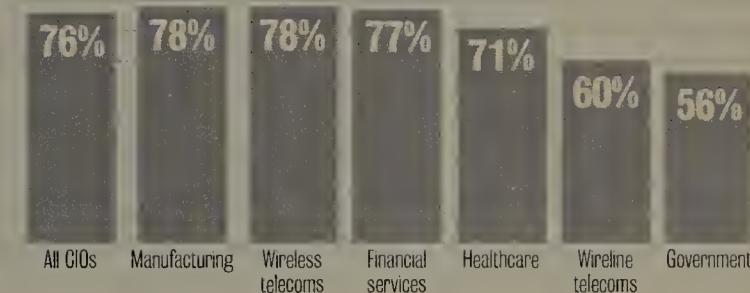
But network professionals and industry analysts say it won't be that easy, because SOA is something you build, not buy.

"There is no such thing as SOA; it is not a noun, it is a verb, 'service orienting,'" says James Kobielski, an analyst with Burton Group.

And the verb implies that work needs to be done to service orient applications and networks. Work to define and execute an overall strategy, to train developers, to retrofit existing applications, to implement standards, to

### Investing in SOA

A Yankee Group study of 473 CIOs shows that a broad cross-section of industries will invest in service-oriented architectures.



build new layers of middleware, to define new levels of management, to devise new security defenses, and to construct methods to track it all.

It's all needed because the SOA

concept is one in which components, whether they are full applications or single-function code such as a mortgage calculator, can be shared, reused and loosely

See SOA, page 69

## Roadblocks for shared IDs: Trust, immature standards

■ BY JOHN FONTANA

DENVER — Speaking at last week's Digital ID World conference, American Express, Fidelity Investments, Boeing, Fifth Third Bank, Premier and a host of other companies shared their hopes, early successes and concerns as they try to integrate their identity management services with business partners and customers.

The goal is the ability to have users authenticate themselves to their local network and then be able to pass that authentication to partners for access to services or data on the partner's network.

The concept, known as federated identity, would ease user management and the associated costs, improve network security, provide a means to document regulatory compliance and fuel e-commerce and Web services that let partners share computing resources.

Early adopters are reporting some of those benefits mainly in combination with business partners with whom they already have a relationship. Those relationships, they say, are the place to start because they reduce the

■ Read more about  
Microsoft's identity plans.  
Page 8.

See Federated, page 8



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### Infrastructure

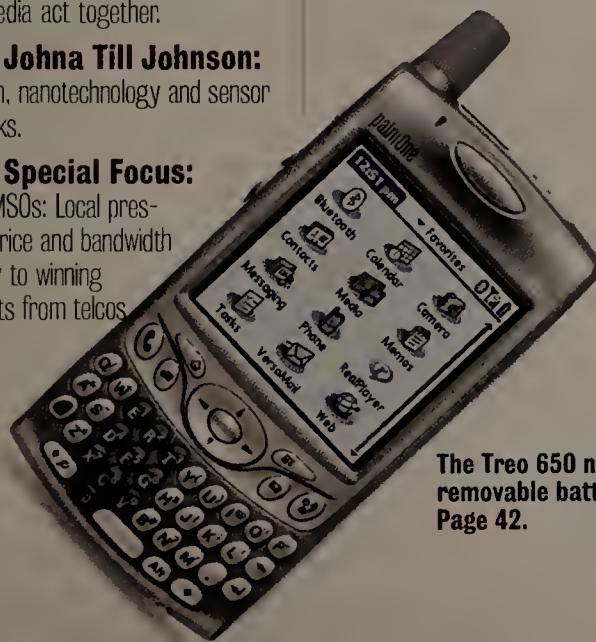
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The Treo 650 now has a removable battery. Page 42.

## Features

### Security Summit on Digital Strategies:

Can security be a competitive advantage? Are security and privacy at odds with speed and collaboration? These are some of the pressing questions that 23 CIOs and leading academics addressed during a recent summit meeting on security at Dartmouth College. **Page 54.**



### CLEAR CHOICE TEST

## Policy management

Configuresoft's Enterprise Configuration Manager gets high marks as a compliance management tool. **Page 46.**

### E-mail at a crossroads:

Spam, phishing and other abuses are threatening to undermine confidence in the Internet. What will it take to solve the crisis before it's too late? **Page 48.**

## NetworkWorldFusion

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### Exclusive

#### Network World Fusion Radio: Conferencing and collaboration

Conferencing and collaboration have come a long way, but the technology has miles to go before it becomes truly useful. John Seely Brown, a visiting scholar at the Annenberg Center at USC and former chief scientist at Xerox Parc, discusses what's good and bad about current conferencing and collaboration technologies.

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### Columnists

#### The Wireless Wizards

What happens when everyone has a WLAN?

The Wizards answer a reader who asks: "Will interference limit the value of wireless LANs in the future? What happens when every company, resident and such has a wireless LAN?"

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#### Nutter's Help Desk

Windows vs. Linux

Help Desk Ron Nutter answers a reader who writes: "As we look to add additional servers to our network, the discussion is whether to use Windows or Linux. How should we fairly evaluate our options?"

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#### Telework Beat

Census counts home workers

NetWorker Managing Editor Toni Kistner says the new "Working at Home: 2000" report shows we haven't come all that far when it comes to the diversity of the telework population.

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### Seminars and Events

#### Weekly Webcast Newsletter

Our weekly newsletter delivers information on Webcasts on Network World Fusion — your 24/7 source for solutions and strategies, with links, resources and answers you need. Covering topics such as security, applications and wireless, our Webcasts are focused, single-topic briefings from technology experts. **DocFinder: 2542**

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## News

## Bits

**U.K. report boosts desktop Linux**

■ Open source software proponents received a potential boost from the U.K. government last week with a release of a report citing the well-documented advantages on the server side, and also growing maturity on the desktop front. The assessments were made by the U.K. government's central procurement agency, the Office of Government Commerce, in summarizing its trials of open source software use in the public sector. The OGC cited progress in desktop products, such as OpenOffice or Sun's StarOffice, for "transactional workers" who handle routine duties, but not for "knowledge" or "power users" who require more advanced capabilities. However, 85% to 90% of the desktop users at government trial sites were transactional users who could perform their jobs with basic word processing, e-mail and spreadsheet tools, the report said. In addition to its maturing functionality, open source software has related benefits in terms of hardware because it requires less memory and a slower processor speed for the same functionality that proprietary applications offer, the OGC report said.

**Vendors push Trusted Mobile Platform**

■ With an eye toward making mobile devices and the commerce services that run over them more secure, NTT DoCoMo, Intel and IBM last week published a jointly developed security specification called the Trusted Mobile Platform. It aims to provide an end-to-end security architecture for mobile wireless devices, including hardware and software components and technology protocols, the companies said. It also incorporates security technologies and controls such as tamper-resistant modules, domain separation and authorization and management protocols, the group said. Trusted Mobile Platform is designed to protect against viruses and other security threats, and let phones be used for more advanced applications such as "e-tickets" and "e-wallets" that could be used to pay for goods in stores and online. It includes a protocol to show that a device is a trusted member of a network and can be safely connected to other devices, the companies said.

**'Wiki' start-up generating early buzz**

■ A Silicon Valley start-up aiming to catapult wikis into the mainstream and transform the editable Web sites into an

"Boy, is this SIMS Real World game cool!"

Even cooler is Mike Sandvik of Coon Rapids, Minn., who wrote the above and is the winner of the latest Weekly Caption Contest. Wanna be like Mike? Check back every Monday for the start of the next round. [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 4242.

**The Good The Bad The Ugly**

**Time to hit up the boss.** Overall CEO confidence has been sliding over the past few months, but a *Chief Executive* magazine survey of 500 U.S. CEOs shows real interest in increasing tech spending in the near future. More than 70% of CEOs surveyed said they intend to boost tech spending in the next year, while 25% expect to increase spending by more than 10% of their current budget. The top three areas for CEOs to add additional resources are hardware, security and software integration.



**Beware this patch.** Security experts are warning of a phishing scam that targets Red Hat Linux users with a "patch" that is actually a Trojan horse. The faked message looks like it comes from the Red Hat Security Team and warns of a vulnerability in the operating system's "ls" and "mkdir" commands, according to an advisory from K-Otik, a security consultancy. The downloaded file creates a bogus user account that an attacker can use to access the system.



**Spammers on trial.** The first felony case for alleged spammers in the U.S. went to trial last week in Virginia. The three defendants have been charged with sending AOL customers millions of unwelcome e-mail messages regarding penny stocks and assorted gimmicks. They each face up to 15 years in jail if convicted on all three counts. ▼



application development platform has attracted a flood of interest for its product beta. Nearly 3,000 companies, small and large, have signed up for free beta test accounts with JotSpot, the company says. Wiki is a term derived from the Hawaiian word for "quick" and describes Web sites that can be accessed and changed using a simple browser-based user interface. Especially popular among tech-savvy people, probably the most visible wiki is Wikipedia, an online encyclopedia created by thousands of people. JotSpot seeks to make wikis more accessible by adding a "what you see is what you get" editor that even novice users should be able to handle. And to make wikis more useful as a collaboration tool, JotSpot gives each wiki page that it hosts an e-mail address, which lets users add an archive of e-mail messages to pages.

**Competition underway to run .net**

■ The Internet Corporation for Assigned Names and Numbers was expected to kick off a competition to operate the .net registry last Friday with its release of a draft request for proposals. Confirmation was unavailable at press time. The domain name industry expects a final RFP to be issued in mid-November, with bids due in early January. The high-profile contract is scheduled for award next spring, and a June cut-over date is anticipated. The competition is expected to pit incumbent VeriSign against upstarts Afilias and NeuLevel. Afilias operates the .info registry and provides back-end registry services for .org and eight country code top-level domains. NeuLevel operates the .biz and .us registries. The competition will be fierce because .net is a critical piece of the Internet infrastructure. Only 4.9 million .net names have been registered, compared with nearly 30 million .com names. However, .net names are often used for the name servers and e-mail services that underpin major e-commerce sites and corporate VPNs.

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# Microsoft readying simpler ID mgmt.

BY JOHN FONTANA

DENVER — Microsoft is developing a portal-like interface for its identity management platform that will let users self-manage their identity information and provision network services.

The features are part of Gemini, the code name for the next version of Microsoft Identity Integration Server (MIIS). Microsoft officials offered the first peek at Gemini at last week's Digital ID World conference. Microsoft said

Gemini likely would ship at the same time as Longhorn server in 2007, but could be released as early as 2006.

Microsoft says Gemini's highlight is self-service provisioning features that let users maintain their own identity information and give delegation of authority to managers, department heads and others to create and delete accounts for select user sets.

The intent is to make it easier and more cost-effective for customers to manage user identity

and access by pushing out those responsibilities to users with a vested interest in the information.

"This is a self-managing model with constraints as opposed to the manual model of today," says Kim Cameron, architect of directory services for Microsoft. "For the first time we'll have a separate provisioning component that's self-service for identity management."

MIIS is a system-to-system integration hub built on meta-directory technology that pushes identity changes made in one

system out to all other systems connected to the hub to keep identity information in sync or to create accounts. For example, a new employee added to the human resources system could trigger the account creation for that user in other systems based on a set of pre-defined rules. Also, an employee's job status change could trigger new levels of privileges in current accounts.

Cameron says users can go as far as they want in delegating provisioning authority, including pro-

visioning group memberships within Active Directory. "We have finally finished the wiring [of the identity platform], and now we can do more stuff on top that is valuable," he said.

Self-service delegation and administration, along with Web-based access controls, have been the most glaring gaps in Microsoft's identity management strategy, experts say. Microsoft, along with HP, IBM, Novell, Oracle and Sun are building comprehensive identity-management platforms with an eye on Web services and standards-based interoperability.

"A lot of people want to do self-service and provisioning but it takes a lot of work and customization to get the needed workflow and approval routing," says Jamie Lewis, president of Burton Group.

"It's good what Microsoft is doing but the question is to what degree can it pre-package that and make it function without a lot of customization," he adds.

Lewis says Microsoft also will need to increase the number of connectors in MIIS to non-Windows systems.

MIIS shops today must write scripts to delegate any level of provisioning authority to users. In Gemini, users will have a personalized point-and-click portal-like interface that gives privileges that reflect their role and authority level within an organization. The feature will be linked with the Authorization Manager features in Windows Server 2003 and with an audit/reporting module in Gemini based on another technology Microsoft is developing called the Audit Collection System, which is used to track changes made to user identities and access rights.

MIIS is one component of Microsoft's emerging identity-management platform that also includes Active Directory and Active Directory Application Mode (ADAM). ADAM is based on the Lightweight Directory Access Protocol and is an alternative to the standard, full install of Active Directory.

Microsoft plans to release Service Pack 1 of the current version of MIIS along with Windows Server 2003, code named R2, in the second half of 2005. That MIIS release will include more synchronization connectors as well as upgrades to password management features. ■

## Federated

continued from page 1

trust and legal issues inherent in sharing user data and exposing corporate systems.

Both those issues are major sticking points to adoption of federation. Users are concerned not only about liabilities in handling sensitive and often private data, but how partners will use or share that information with others through federation, which could expose otherwise confidential data.

"The challenge in federation is the trust model," says Mike Beach, associate technical fellow in the shared services group at Boeing. "How do we not jeopardize security and not anger customers."

## Standards challenge

Another challenge is standards. While there is agreement that identity management standards must converge, there is no industry agreement yet on one benchmark. The Security Assertion Markup Language seems to have garnered more acceptance than the Liberty Alliance specifications, although the two will converge in SAML 2.0, which is nearing standardization.

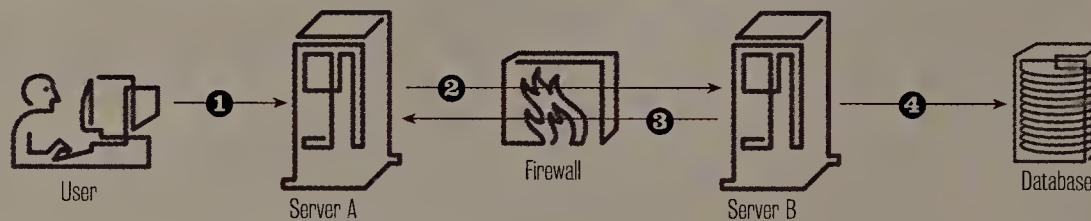
IBM and Microsoft also are developing a competing specification called WS-Federation. While different in approach, both SAML and WS-Federation look to standardize the way companies share user and machine identities among disparate authentication and authorization systems.

Beach says role-based access, in which a user is granted network privileges based on some defined role such as engineer, is another problem area.

"We do role-based access today with about 400 airlines and each one has its own roles.

## Identity exchange

**In a basic model to share identities between companies, known as federated identity, a user's identity credential issued on his corporate network can be used to access services on a partner's network. The exchange of credentials is supported by a number of protocols, including the Security Assertion Markup Language, the Liberty Alliance specification or WS-Federation.**



- 1 User authenticates to a Web-based application on Server A within his company seeking data that is housed on a database maintained by a partner.
- 2 Server A passes the user's authentication credentials to Server B on the partner network.
- 3 Server B validates the credential with Server A.
- 4 Server B either validates or rejects the user's request for access to the database.

SAML isn't equipped to deal with that," he says.

Fidelity has half a dozen companies and 200,000 people who use SAML-based federation services. Fidelity also does some federation between its internal benefits site and third-party providers and internal federation so users have access to partners.

"Time and effort put into education and legal issues are among our biggest gotchas," said Alex Popowycz, vice president of information security at Fidelity. But he said the technology solves access issues and agreed with other users that federated identity will be the wave of the future.

"The technology is not ready today, but federated identity will eventually become ubiquitous," Beach said.

Boeing last year kicked off a federated identity deployment with Southwest Airlines. "We are learning that trust is a real problem, slowing much broader deployments. Our pains since deploy-

ment have been monitoring, management and troubleshooting. It's hard enough to troubleshoot issues within Boeing, now we have other companies involved."

Those types of issues point to the risks associated with federated identity when users start to share policies, to mandate certain levels of technical operation and try to audit and log the information that is passed between partners.

"The next step from identity management to federated identity is really a huge leap," said Mike Neuenschwander, an analyst with Burton Group, who led a Digital ID World panel of early adopters in a discussion about federated identity.

"We've had some quick thrills but now we want to share such things as user attributes to support personalized services, and you create issues around semantics, privacy and trust," he said.

Users say those issues might be

solved by creating smaller communities of trust, possibly by vertical industry, which would create standard policies around sharing identities.

"I look at Covisint in the auto industry where you have a community of trust," said Bob West, chief information security officer for Fifth Third Bank in Cincinnati. Covisint allows those in the auto industry to share business processes.

"You could create the same sort of identity hub," he says.

While users are quickly identifying their concerns, no one seems to be looking back.

"The centralized model [for identity] is dead. It didn't scale in the '90s and it doesn't scale now," says Michael Barrett, vice president of Internet technology strategy for American Express and the president of the Liberty Alliance. ■

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# Forbes.com

## Tests New Data Center

*Spirent helps leading business site ensure performance*

Michael Smith, Vice President and COO, Forbes.com

*“By helping us prevent downtime, Avalanche saves us time and money.”*

If you want up-to-date business news, chances are you've visited Forbes.com. The popular Web site is known not only for its original, in-depth reporting but also for its comprehensive lists. These lists range from the Forbes 2000, a ranking of the world's biggest companies, to surveys of the best business schools.

To ensure their site meets visitors' expectations for performance and availability, Forbes.com tests its Web infrastructure regularly with the Avalanche load-testing appliance from Spirent Communications. Testing with Avalanche not only helped the company prepare for their move to a new data center, but also assures Forbes.com that their Web site is prepared to handle the spikes in traffic that come with the release of its popular lists.

### Moving to a New Data Center

Forbes.com is one of the most trusted information resources for international business leaders and senior executives. The site provides real-time business news, stock and mutual fund quotes, comprehensive company profiles and a wide array of interactive tools, including the famous Forbes lists.

In late 2003, the company realized that Forbes.com had outgrown its data center. In December, Forbes.com prepared to move to a new center that could better accommodate its growth.

*“There was absolutely no question that we were going to stick with the Avalanche!”*

“We'd been in our existing site for four years and had outgrown it,” says Michael Smith, vice president and COO of Forbes.com. “We were upgrading our hardware to new Foundry Networks core routers and switches and our software to Linux, so we had a chance to start fresh and make sure the site became faster and more scalable. We want to ensure that

the user experience is as responsive when we're experiencing high traffic on an atypical list release day as it is on a regular business day.”

To ensure the cutover would be successful, Forbes.com decided to test the stability and availability of its new Web infrastructure with the Avalanche 2500 load-testing appliance from Spirent — a product the company had used to test its Web site since 2001. “There was absolutely no question that we were going to stick with the Avalanche,” Smith says.

As one of the top business sites on the Web, Forbes.com gets a high volume of traffic on a daily basis. However, that traffic level spikes on the days that the site releases its lists. In addition, Forbes.com adds new functionality every week to the 150-plus applications that run the site. The company can't afford for its site to be down, because visitors will simply click over to a competitor's site.

“It's critically important that we constantly test the site to ensure that it has the scalability to handle both surges in traffic and the addition of new software,” Smith says. “We need a tool that can push traffic far beyond what we think we'll get, so we can analyze our upper limits and anticipate where things might break.”

### Optimizing TCP Throughput

During the tests on Forbes.com's new data center infrastructure, the team used the Avalanche test appliance from Spirent Communications to generate a mix of users and traffic rates that emulated the expected traffic on Forbes.com. The test team configured the Avalanche to simulate 30,000 concurrent users and 12,000 to 15,000 hits per second while the site served up more than 400 Mbps of content.

Through Avalanche testing, the team discovered that throughput was below acceptable levels, with the site serving only a fraction of the required pages. By testing with Avalanche, they identified the potential breaking point of the new site.

The team quickly set up tests to identify the limiting performance thresholds across several metrics — bandwidth, transactions per second and concur-

rent users. Once the bottlenecks were identified, it was revealed that the Forbes.com traffic mix had been constrained by servers that were accepting a low rate of new TCP connections.

The servers in the new data center had been tuned to create more TCP connections than the previous process could actually thread. By re-tuning the new servers to deliver a higher level of TCP throughput, a more robust user experience was achieved.

*“We used the Avalanche to test the limits of the new site until we felt that it was ready to flip,” Smith says. “When we cut over, we had every confidence that it would run perfectly — and it did.”*

### Flawless Performance

After optimizing the Web servers, Forbes.com used the Avalanche to test its application servers, the performance of hardware devices such as load balancers and even the failover site. When the day came to switch over to the new site, Forbes.com felt completely secure that the new Web infrastructure could handle the demands of real-world traffic.

“We used the Avalanche to test the limits of the new site until we felt that it was ready to flip,” Smith says. “When we cut over, we had every confidence that it would run perfectly — and it did. The enhanced reliability and performance achieved through Avalanche testing has delivered immeasurable value. By helping us prevent downtime, Avalanche saves us both time and money.”

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# HP to debut switches, mgmt. software

Company launches edge switch with copper, fiber 10G links.

■ BY PHIL HOCHMUTH

HP this week is expected to release two wiring closet switches that let users uplink with 10G Ethernet via fiber or copper links.

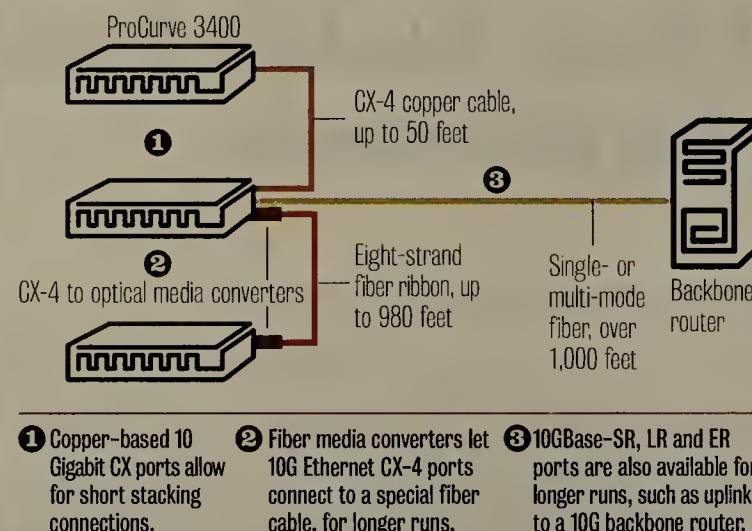
The ProCurve 3400 series switches are fixed-configuration boxes with 10/100/1000M bit/sec ports for connecting network devices, and two slots for single- or multi-mode fiber or CX-4 copper 10G Ethernet uplinks. The boxes could help businesses that need to connect large numbers of fast computers to a LAN, or aggregate Gigabit links from multiple switches with 10 Gigabit uplinks.

The ProCurve 3400cl 24Gb is a 24-port, 10/100/1000M bit/sec switch with four auxiliary ports for Gigabit copper or fiber in the front, and slots in the back for 10G uplink modules. The 3400cl 48Gb has the same uplinks and four fiber/copper auxiliary Gigabit ports, but it includes 48 triple-speed ports on the front.

"This bodes well for the 10 Gigabit market," says Max Filisi, an analyst with IDC. He says HP's

## 10G, three ways

**HP's ProCurve 3400 series switches, which have 24 or 48 ports of 10/100/1000M bit/sec Ethernet, boast three ways to uplink with 10G Ethernet.**



1 Copper-based 10 Gigabit CX ports allow for short stacking connections.

2 Fiber media converters let 10G Ethernet CX-4 ports connect to a special fiber cable, for longer runs.

3 10GBase-SR, LR and ER ports are also available for longer runs, such as uplinks to a 10G backbone router.

switches, which will let 803.3ak ports be connected to a special fiber-optic cable, which can extend 10G reach up to 300 feet (about as far as Gigabit Ethernet over copper can go). However, this technology won't be available until spring 2005.

virtual LAN and traffic tagging, Resource Reservation Protocol and Differentiated Services.

Price is another differentiator HP is touting. The two-port 10 Gigabit module starts at about \$2,700 with the optics starting at \$4,000 for a total of about \$3,350 per 10 Gigabit port. This is about 45% to 60% less than 10G-capable wiring closet switches from Foundry Networks and Extreme Networks, which also charge extra for full Layer 3 capabilities.

Pricing for the 3400 series products:

- 24-port 3400cl-24Gb, \$3,760.
- 48-port 3400cl-48Gb, \$6,900.
- Dual-port 10 Gigabit Ethernet Media Flex Module, \$2,700 and available in December.

• 10GBase-CX-4 copper modules, \$1,700 and available in December.

• 10GBase-LR single-mode-fiber module, \$4,000 and available in December.

An additional multi-mode 10G module, and a long-range (25-mile) single-mode-fiber module will be available in the second quarter of 2005, with pricing to be determined. The CX-4 Optical Media converter also will be available in spring 2005. ■

**“We're seeing more vendors getting into [10G Ethernet], and it's a testament to the fact that there is demand for the technology and potential for growth.”**

**Max Filisi**  
Analyst, IDC

push into 10G with lower-priced products should help drive adoption of the technology, while pressuring competitors to also cut prices. "We're seeing more and more vendors getting into [10G Ethernet], and it's a testament to the fact that there is demand for the technology and potential for growth."

Besides fast port speeds and diverse uplinks, HP says its switches also offer advanced routing and traffic control features, which other vendors charge extra for on competing products. HP says the 3400s come with full Layer 3 routing, and support for Routing Information Protocol and Open Shortest Path First protocols, as a standard feature. The switches also support Layer 2, 3 and 4 QoS technologies, such as

Company says it will reveal its business service management strategy and products.

■ BY DENISE DUBIE

HP later this month is expected to unveil the fruit of two acquisitions that the company says will help customers automate the detection and resolution of application performance problems and maintain IT service levels.

At HP Software Universe 2004 in Madrid, HP will announce its plans to couple new and current products with professional services that could help customers adopt IT service management best practices as outlined in the Information Technology Infrastructure Library, for example.

The company will unveil products that incorporate technology from Novadigm's systems management software and Consera's modeling tools. HP acquired the two companies earlier this year.

HP competitor BMC Software last month announced similar plans with the release of its Service Impact Manager 5.0, which BMC says will help customers quickly synchronize IT infrastructure components with business applications and let customers manage IT based on service delivery.

"I am looking at business service management as vapor-ware right now," says Jason Kennedy, senior analyst and system engineer at Tsunami Communications, an enterprise IT consulting firm. "The buy-in and leg work required to get the IT-business alignment done right now is monstrous."

HP also needs to clearly identify to whom in the IT organization it will target its products. "This is not as easy as it sounds because the technology theoretically should be used by and give value to many different parts of IT — operations, business units, developers, even auditing and purchasing," says Jasmine Noel, principal with Ptak, Noel and Associates.

She says an ideal integration would use Novadigm technology to discover asset configurations, Consera tools to map the relationships between assets and business applications, and OpenView ServiceDesk to kick off problem resolution when service levels aren't met.

For now, HP has moved Novadigm's popular systems management software suite, Radia, under its own HP OpenView Change and Configuration Management solutions brand. Scott Donaldson, vice president of software distribution and workspace automation at KeyCorp, a bank-based financial services company in Cleveland, reports no real changes in product support or technical engineering since HP acquired Novadigm. He is in the process of implementing Radia OS Manager for automated provisioning and Radia Patch Manager for applying software patches to systems.

"Patch management is an obvious area in which HP could quickly get a lot of value out of Novadigm's technology," says George Hamilton, a senior analyst at The Yankee Group.

With competitors such as Computer Associates and IBM focusing on security management products, including patch and identity management, Hamilton says HP needs to up its security management product offerings if it wants to offer complete IT service management. ■

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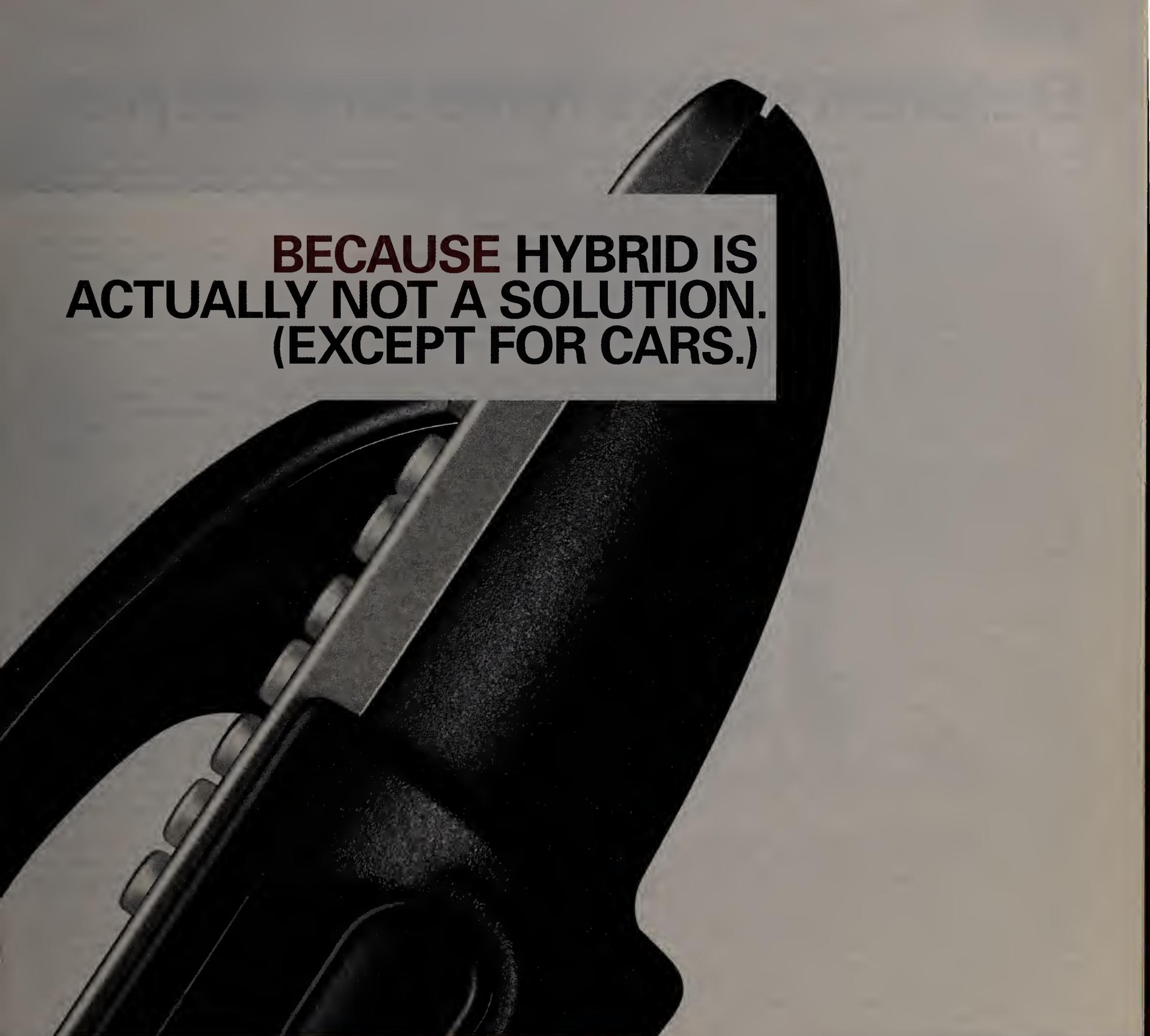
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# Equipment makers revive corp. net plans

■ BY JIM DUFFY

Traditional telecom equipment vendors are increasingly targeting the enterprise network market, banking on growing demand for packet-based capabilities similar to those for carriers.

The fact that the worldwide market for packet-based enterprise communications equipment is twice as big as that for service provider equipment has not been lost on Lucent and Nortel, which are rediscovering network religion after disengaging from the market to different degrees in recent years.

Juniper, meanwhile, is itching for a fight with Cisco, the runaway leader in the enterprise network market. Juniper has begun mounting its inaugural quest in this market, an effort that will consist of buying and building technology and market share.

"There is an up and downside for Juniper in the fact that Cisco owns 90% of the router market," industry analyst Nick Lippis said in a report on Juniper's enterprise aspirations. "On the up side, taking only 10% of this market would expand Juniper's revenue by nearly 50%. On the downside, Cisco does not only own 90% of the market share; it owns perhaps 100% of the mind share, and its customers are loyal."

But those customer loyalties could be broken, observers say. As the dominant supplier to corporations, Cisco commands premium pricing. And not all its products are best-in-breed, analysts say.

Recognizing this, Juniper made a forceful entry into the enterprise network market with February's acquisition of security vendor NetScreen Technologies, and followed with the launch of its J-Series access routers in June. Many expect Juniper to acquire a presence in Layer 3 Ethernet switching — perhaps via Extreme Networks ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 4463).

Juniper had a rough third quarter in the enterprise, however. For the period that ended Sept. 30, Juniper posted security product sales of \$63.4 million, about \$25 million below analyst estimates and \$32 million below the second quarter's results. Security products accounted for 17% of Juniper's third-quarter revenue.

Juniper has yet to recognize revenue for the J-series routers, which just began shipping.

## Eyeing enterprise networks

With the worldwide market for packet-based enterprise network equipment being roughly twice as big as that for packet-based carrier gear...



... carrier equipment makers are taking a closer look at hot segments of the enterprise network market, such as wireless LANs and IP PBXs.



But Juniper's not expected to stop its enterprise incursions at access routers or security. Observers say to look next year for the vendor to develop or acquire Layer 4-7 Ethernet switching and IP PBX capabilities, and perhaps wireless LAN (WLAN) and storage networking technologies. These areas are hot in enterprise networks and targeted by rival Cisco as billion-dollar opportunities. Juniper has added 70 people to its R&D team, plus brought in 100 more sales and marketing people to help boost awareness of its efforts across all market segments.

"We see significant opportunity in expanding the corporate networking and security side of our business," Juniper CEO Scott Kriens said during a third quarter earnings conference call two weeks ago. "The opportunity is growing."

Analysts concur.

"Anything that Cisco might sell is something that [Juniper] might look at," says Zeus Kerravala of

The Yankee Group.

Well, not everything, Juniper says.

"That wouldn't be a very smart strategy for this or any company," says Christine Heckart, Juniper's vice president of marketing. "For this company specifically, it would not be very consistent with what we're great at with our core competencies. Great companies build their growth strategy around their essence."

Juniper's essence is routing and intelligent packet processing. That can be applied in a lot of places, especially in some of the hotter areas of enterprise networking: IP PBXs, WLANs, storage-area networking, and Layer 3 and 4-7 Ethernet switching.

Some analysts say Juniper will move to enter some of these markets sooner rather than later.

"As we look to 2005, we expect Juniper to be more aggressive in the enterprise market, not only through the sales and marketing of the J-series products, but also the launch of a broader enterprise portfolio through internal development and through acquisitions," says Nikos Theodosopoulos, a UBS Warburg analyst, in a report on Juniper's recently ended third-quarter financials. "Technology areas we believe Juniper is working on or is seeking to acquire include Layer 3-7 switching and enterprise VoIP."

Kerravala says Layer 4-7 switching, although not a huge or exploding market, is an area where Juniper could make an immediate impact. He mentioned F5 Labs as a possible acquisition candidate.

"It's a relatively niche market, [and] Cisco's products aren't very strong," he says. "If you're looking for an area where you can go in and make some noise quickly, 4-7 would probably make sense."

As for enterprise VoIP, a few significant deals struck recently by Cisco — Bank of America and Ford Motor — must whet Juniper's appetite. The company's current enterprise VoIP strategy is to partner with IP PBX vendors such as Avaya, with which it is testing and demonstrating interoperability between the J-series routers, security software and packet PBXs.

But partnering might be a precursor to insertion. Juniper did not rule that out for enterprise VoIP or any growing market.

"We continually assess all mar-

ket opportunities," Heckart says. "It's an ongoing, systemic process, which is what took us into the security space at the beginning of this year."

## Lucent's plan

There's also serious growth opportunity for Juniper partner Lucent. Sales of Lucent's network management software, Ethernet/SONET transport systems, VPN firewalls and Accelerate VoIP products grew 30% to 40% over the past year, and are expected to exceed that this year, according to Mark Wilson, Lucent's enterprise sales vice president.

This is five years after Lucent jettisoned its enterprise business, spinning it out and into the independent company Avaya.

Lucent builds its enterprise presence through indirect channels and partnerships, such as those with Sun and IBM for VoIP and network management, respectively. Sales to corporations account for just more than 1% of Lucent's total revenue.

UBS Warburg's Theodosopoulos expects Lucent to tap Juniper to further its enterprise ambitions.

"We also believe Lucent is incorporating Juniper security prod-

See Juniper, page 16

# Top Layer unveils clustered IPS

■ BY ELLEN MESSMER

Top Layer Networks this week is expected to unveil a clustered version of its intrusion-prevention system that can reach 8G bit/sec throughput while supporting inspection and traffic blocking through multiple routers.

The Attack Mitigator IPS 5500 ProtectionCluster combines two IPS 5500 appliances in a design that ensures that if one fails, the second will continue to operate at up to 4G bit/sec and inspect traffic at the packet level to block attempted break-ins and denial-of-service attacks. Top Layer says ProtectionCluster improves on previous fail-over mechanisms that the IPS uses by supporting the asymmetric routing architecture that large organizations favor.

Mike Paquette, vice president of technology at Top Layer, says large organizations sometimes balance traffic across two routers for better performance and reliability, but this can make it harder for an IPS to inspect traffic. "It can confuse the IPS," Paquette says, because session traffic is being shared between routers.

While there has been no independent lab testing of IPS products that explore the effect of asymmetric routing and high availability on IPS efficiency, equipment-evaluation firm NSS Group is expected to undertake such testing late next year.

One customer using the stand-alone version of Attack Mitigator IPS 5500 says he plans to upgrade to ProtectionCluster.

"I do have a single point of failure here so I plan to use this," says Dave Foss, manager of computer systems and networking at the Massachusetts Institute of Technology's research laboratory of electronics in Cambridge. The Attack Mitigator, which has been used at MIT for about a year, has been very reliable, he says.

MIT uses the Attack Mitigator 5500 as the firewall for four MIT departments, while the electronics lab is the only one that has elected to use Attack Mitigator's blocking capabilities. The result has been "the lab has the lowest number of attacks on campus for a large sub-net," Foss says.

While brief downtime on a university campus doesn't usually constitute a crisis, that is not necessarily the case in the corporate world, Foss notes. There, IPS backup and the ability to support asymmetric routing and fail-over in an IPS would have high importance, he says.

Although Attack Mitigator IPS 5500 ProtectionCluster can achieve up to 8G bit/sec throughput, it faces a far lower limit of 2G bit/sec when used to inspect traffic for content, such as filtering undesired types of file attachments.

The product costs between \$50,000 and \$160,000, depending on variations in speed and ports. ■

# Red Sox IT department caches in on World Series

■ BY BOB BROWN

The Boston Red Sox, newly crowned champs of Major League Baseball, traditionally haven't been known for team speed. Until recently, neither was the network the club used to support news reporters and photographers working postseason games at Fenway Park.

But the organization recently showed quickness in coming up with a system designed to give reporters faster access to Web sites and enable photographers to get pictures online more quickly while covering playoff games from the storied ballpark.

IT Director Steve Conley, who was reached the morning after the Sox dispatched the St. Louis Cardinals in Game 4 of the World Series, says the trouble began during the last regular season series between the Red Sox and New York Yankees in September. Members of the press working at Fenway complained of poor network response times, the result of dozens of people jamming the two bonded T-1 lines the Sox use to support the media, he says.

Conley knew things could only get worse with the Sox heading into the playoffs in



October, given the inevitable increased media presence.

Rather than dealing with the long lead times and hassles of bringing up additional T-1s, Conley opted to install a proxy appliance from Blue Coat Systems that cached the Web sites most frequented by media members seeking statistics and other information as they reported on and wrote about the playoff games. Conley says the Proxy SG 800, which sits behind the organization's firewall, helped slash response times from a "noticeable" half-second or so to about one-twentieth of that.

"We didn't have any serious network issues the entire postseason," he says. "Sixty or seventy percent of our Internet traffic wound up going out of cache."

The more efficient network system, which also included additional wireless access points, let photographers on the field upload photos quickly to their organizations' Web sites while the games were in progress, Conley says.

The Red Sox exploited Blue Coat's system for caching capabilities, which is the technology that gave Blue Coat (formerly CacheFlow) its start. Blue Coat also offers anti-virus, anti-spyware and other applica-

tions on its appliances. Conley says the Red Sox will consider adopting some of that technology, including for its front office network.

"We haven't had much rest for the last couple of months," Conley says. "Hopefully, we'll be able to step back soon and look at what we need." ■

## Avaya, Polycom team on desktop videophone

■ BY JASON MESERVE

Avaya and Polycom have teamed to create a desktop videophone that lets users place a video call by dialing a standard telephone number.

The combination of Avaya's VoIP Softphone application and Polycom's ViaVideo personal conferencing unit, is being dubbed Avaya Video Telephony Solution: Desktop Edition. The package is powered by the new Integrator for Polycom Video, a piece of software that lets an Avaya IP Softphone 5.1 client control the Via Video unit. Via Video is a self-contained camera and microphone system with digital signal processing chips that offload the audio/video compression work from the attached PC's main processor.

Application users can place a normal telephone call and the Integrator will determine whether the recipient's system can accept video and either prompt the user to ask if they want to use video or launch it automatically, depending on the preference setting.

"The user gets to leverage the telephony infrastructure since they're placing a voice call first," says Greg Brophy, senior product manager at Avaya. "They can use forward and coverage [such as voice mail] and [send the call] to non-video endpoints."

One drawback to the system is that it can only be used for point-to-point calls between similarly equipped systems. One cannot participate in a multi-point video call or connect with a Polycom videoconferencing appliance. Multipoint and Webcam support are scheduled for the next release due out in the first half of 2005, Brophy says.

This is the first product announcement from the two companies since they signed a development agreement in December 2003. While both companies promise more products and tighter integration between Avaya telephony and Polycom video, they're not as far along as their chief competitors, Cisco and Tandberg, says Brent Kelly, an analyst at Wainhouse Research.

"This is the first fruits of alliance as far as products go," Kelly says. "The real big step forward is when multipoint and [the ability to call] other video systems is rolled out."

Avaya and Polycom are selling the Softphone/ViaVideo package for \$429. Users that already have a Softphone 5.x client and a Via Video unit can download the Integrator application for free. ■

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# Data center cooling issue heats up

■ BY DENI CONNOR

ORLANDO — IT professionals often over-build their cooling and power systems in data centers because they misunderstand or miscalculate necessary thermal requirements, experts say.

Such misjudgments can result in the unnecessary purchase and installation of hundreds of thousands of dollars of computer room air conditioning (CRAC) units and power supplies, and far-too-cool data centers.

"Data center managers are not understanding the power and heating requirements of servers and storage," says Brian Garrett, an analyst for Enterprise Strategy Group. "There is a huge problem over-provisioning the data center."

At Storage Networking World last week in Orlando, Don Beaty, president of DLB Associates, an engineering and consulting firm, told attendees that discrepancies exist between the power requirements given on the nameplate on the back of the system and on the detailed configuration specifications that vendors such as EMC, HP, IBM and Sun prepare for

## Cooling and power recommendations

Among the guidelines found in *Thermal Guidelines for Data Processing Environments*, [www.nwfusion.com/DocFinder/4459](http://www.nwfusion.com/DocFinder/4459):

- Dry bulb temperature = **68-77° F**
- Recommended relative humidity = **40-55%**
- Maximum dewpoint = **63° F**
- Maximum rate of change = **9° F per hour**
- Maximum elevation = **10,000 feet**

the equipment when they manufacture and test.

IT often will err on the side of caution and use the nameplate information to calculate the amount of cooling and power they need when they add servers or storage.

The discrepancy between the

nameplate information and the detailed specification can lead to an overestimation of power requirements of 25% or more, Beaty said.

"Equipment nameplates are not a good source for characterizing the power and cooling load," he said. "Nameplates are regulatory-required labeling focused on safety" alone.

The nameplate information is based on a future capability for a fully configured and loaded system, while the thermal report reflects both the minimum and maximum power loads required for the current system.

Nameplates, while listing absolutely safe requirements for operation in the harshest conditions, should not be used to calculate thermal conditions, Beaty said.

Instead he pointed IT to thermal reports that companies such as EMC and Cisco complete on their products.

These reports, which vendors developed in cooperation with the American Society of Heating Refrigerating and Air-Conditioning Engineers (ASHRAE), are

now included with any new gear users buy.

For instance, the IBM Server Model 520 Thermal Report shows a heat release of 420 watts for the minimum configuration and 600 watts for the maximum configuration while the nameplate indicates 1,000 watts, a 40% to 60% increase.

If a data center manager was to have an additional CRAC unit installed to supplement this 40% to 60% power increase, it would cost approximately \$100,000.

But Beaty added that it is not always easy for IT to get a copy of the Thermal Report from their vendors.

"The manufacturers are just starting to modify their documentation to use the Thermal Report, so it currently is not easy," he said. "Publicity will help to expedite this."

Beaty also recommended IT managers purchase a book ASHRAE published this year called *Thermal Guidelines for Data Processing Environments*, which will help them better understand power and cooling issues in their data centers. ■

# Vendors tout WLAN security products

Newbury Networks, Funk Software focus on implementing 802.11i features.

■ BY JOHN COX AND ELLEN MESSMER

New software from two vendors is intended to boost security for wireless LANs, one targeting the network, the other wireless clients.

Newbury Networks added to its WiFi Watchdog software new features to isolate unauthorized access points by disconnecting corporate wireless clients that connect to them accidentally. Separately, Funk Software has released its Odyssey Client 3.1 for Windows computers. The major change is complete implementation of the 802.11i security standard, certified by the Wi-Fi Alliance.

Newbury's Watchdog combines radio frequency sensors with patent-pending algorithms to pinpoint the location of a WLAN client or access point. Using that data, network managers can not only see where these devices are in a building or site, but also enforce security policies keyed to locations.

Watchdog 4.0 now can forcibly disconnect wireless clients from connecting with unauthorized WLANs, whether a hostile rogue pretending to be a legitimate device or simply an

access point in a nearby coffee shop. The Watchdog sensors, monitoring the radio waves, pick up the signals from the access point and client, and the location software detects whether the former is outside the building's walls or in an unauthorized location. Then the sensor can send out packets that break the client's connection.

The new release also adds packet inspection agents to detect packet contents and patterns that indicate possible attacks. The sensors forward 802.11 packets to the inspection agents for analysis. The agents pass any identified threats to the WiFi Watchdog server, which correlates the threat information with location data, and then trips an alarm.

Finally, Newbury added a set of tools to make it easier to create scripts for detecting and responding to new WLAN threats.

Version 4.0 costs \$15,000, which includes 10 Watchdog radio sensors.

## Securing the client

Funk Software's new 802.11i-compliant software aims at improving security on Windows-based clients. Most vendors in the WLAN market are racing to add the improved encryption and authentication to their products, and to gain Wi-Fi Alliance certification.

Odyssey Client 3.1 is adding support for an

authentication standard called Extensible Authentication Protocol-Subscriber Identity Module used in GSM-based wireless networks and Cisco's authentication protocol, Flexible Authentication via Secure Tunneling (FAST), which Cisco has proposed as an open standard by submitting it to the IETF.

FAST has been added to Cisco's Server ACS Security Server and Aironet wireless adapter cards, and the Funk Odyssey client software, expected out in beta next week, would allow user authentication via FAST.

The next Odyssey client also will be able to give an order that makes sure a Windows computer is always logged into what's called a machine account, whether on a wired or wireless network. The machine account gives access to administrators and some applications. This feature duplicates capabilities in Microsoft's wireless supplicant, which is part of XP, according to Funk executives.

The Odyssey client costs about \$50, with volume discounts. ■

■ Read more news on wireless LANs.  
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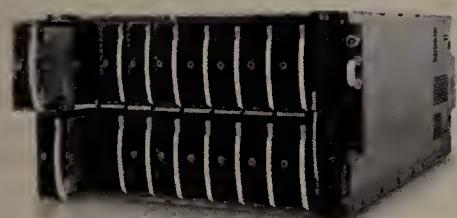
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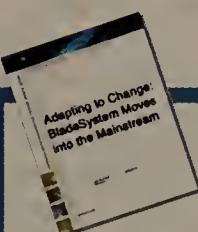
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## Whiskers

continued from page 1

In a sense they were, but by the most unlikely of suspects: microscopic metal strands called zinc whiskers that were growing on the bottom of the data center's raised-floor tiles.

It all started in 2002, shortly after the Toronto company had an outfit in to clean up its data center.

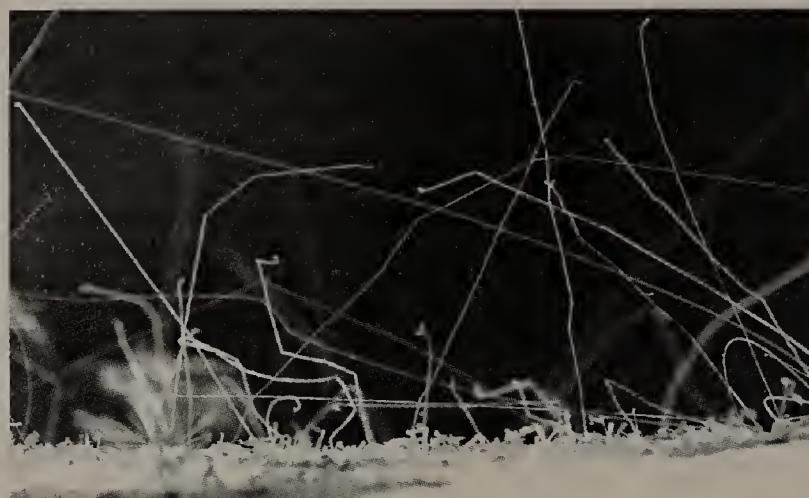
"A couple of weeks later our servers started failing. Motherboards, hard drives, you name it," Harris says. "We put in new boxes and sure enough, they failed too."

Harris says the IT team, which at the time was overseeing a collection of about 50 servers, exhausted all avenues trying to solve the mystery. Finally, the mention at a conference of a similar problem led Baycrest to find that when the cleaning crew raised the data center floor tiles, the conductive zinc filaments — just a few millimeters long and a few microns in diameter — went airborne, short-circuiting the servers.

"We try to spread the word now," says Harris, who estimates Baycrest spent at least \$100,000 replacing floor and ceiling tiles and giving the data center a deep cleansing. "We don't want others to go through what we did."

While metal whiskers were new to Baycrest, they've actually been known since the 1940s when Bell Labs discovered them in telecom environments. Zinc whiskers are thought to "grow" as a result of molecular stress, whereby the zinc used to keep steel on the bottom of the tile from rusting tries to separate itself from the steel. Whiskers have been found to form in a vacuum, but heat, humidity and other environmental factors also have been suggested as triggers. The metal filaments have been discovered growing in cabinets and other data center spaces.

Like many IT problems, zinc whiskers aren't something that companies victimized by them often discuss openly, perhaps for fear of making the IT infrastructure appear vulnerable or the IT management team seem negligent. As a result, many IT shops don't even think to look for whiskers when data center equipment goes on the blink. In fact, looking for them is pretty tough in the first place because they are barely distinguishable with the naked eye from dust. However, by shining a light paral-



Scanning electron microscope image of zinc whiskers found growing on the underside of a zinc-plated steel raised floor panel.

lel to the bottom surface of a zinc whisker-covered floor tile will let the viewer see the whiskers, or more precisely, reflections of them.

David Loman, a power and environmental specialist for HP, speculates that if he asked 10 IT managers about zinc whiskers only two would know what they were. "When I tell people they've got zinc whiskers they look at me like I've grown antennas out of my head," he says.

Loman says one way that zinc whiskers are identified is through a distinctive popping sound that power supplies emit as they are snuffed out by the whiskers. He recalls one customer whose data center lost dozens of power supplies after an old upflow air conditioning system and a new downflow one were turned on at the same time, scattering zinc whiskers everywhere. "It sounded like popcorn," he says.

Those familiar with zinc whiskers say it would behoove IT shops to study up on the contaminant. While the sort of electroplated wood-core floor tiles thought to have spawned most zinc whiskers are for the most part no longer being made or installed, plenty of older tiles remain in data centers. What's more, new compact data center gear, such as blade servers that squeeze components into smaller spaces, are thought to be more susceptible to whiskers.

"I thought the problem would have peaked once manufacturers ran out of the old tiles, but over the last couple of years I haven't seen the problem abate. I think it's grown," says Rich Hill, who heads up a data center cleaning company called Data Clean that comes across a zinc whisker problem about every two weeks.

"People had mainframes for years without any problems from whiskers," Hill says. "Invariably, the

newer equipment is what has the problems."

Data center consultant Bob Sullivan says whisker problems grew as computer systems were built with more-powerful cooling fans. "They sucked the whiskers right in," says Sullivan, dubbed by some as the "Father of Zinc Whiskers." While at IBM in the early 1990s, his team discovered that metal whiskers caused problems with certain of the company's storage devices. He also spearheaded development of remediation processes.

HP's Loman says it isn't so much the way the guts of new equipment is being designed — with components closer to one another — that makes them more susceptible to whiskers. Rather, he says it is that more of the systems now can be packed into a rack, making it more likely that if zinc whiskers are in the air, more equipment will be affected. Whiskers rarely get more than about three feet off the floor, but they do tend to congregate, he says.

Loman says manufacturers have taken steps to prevent companies from having their data centers devastated by zinc whiskers. For example, he says power supplies in data center gear are now usually protected with a plastic coating that keeps contaminants at bay. Also, because most power supplies are now disposable, if they get zapped by zinc whiskers, he says they can easily be swapped out for new power supplies. HP and other vendors also make mention of zinc whiskers in data center site planning materials.

Metal whiskers are still not well understood, though, says Jay Brusse, a component engineer for NASA's Goddard Space Flight Center who collects information on whiskers at a Web site (see [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 4439). NASA stepped up research

into tin whiskers in the late 1990s after hearing about a non-NASA commercial satellite whose failure was attributed to tin whiskers, but has expanded the site's focus to cover zinc and other metal whiskers, he says.

"High-end computing companies I've talked to tell me that things could actually get a little worse before they get better since new equipment still is being installed in archaic rooms that have had plenty of time to grow crops of whiskers," he says.

Another lingering issue with zinc whiskers is whether they could have any effect on the health of data center employees, though experts say research has been limited and that no evidence has shown a link between the whiskers and health problems. IBM employees used to joke that zinc whiskers might even improve their libidos, Sullivan says.

"The joke was that you should stick your head under the floor before heading home for the weekend," he says.

To put whiskers in perspective, Loman notes that other problems his group investigates includes data center damage in the wake of disasters, such as the World Trade Center attacks and volcanic eruptions. He says his group comes across maybe six zinc whisker instances per year, but the cases tend to be significant in terms of the remediation required, which he describes as costly and time-consuming.

Those experienced with zinc whiskers say there is only one way to get rid of them.

"The tiles have to be replaced," Loman says, noting that the whiskers can fairly easily be blown out of equipment. He says experiments have been done to cover tiles growing zinc whiskers with epoxy, but that whiskers have grown through the coating.

Baycrest's Harris says that, among other things, his organization moved its air conditioning system from the floor into the ceiling. The organization also now greatly limits the number of people in its data center, figuring that less foot traffic means fewer contaminants have a chance to be shaken into action.

"When we first heard about zinc whiskers we said, 'You must be joking with us,'" Harris says. "But it's no joke." ■

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DocFinder: 4462  
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## Juniper

continued from page 12

ucts in its enterprise offer, as Lucent tries to increase its presence in the enterprise market," he says in his Juniper report.

Wilson says there is currently no arrangement with Juniper to sell enterprise products.

But Kriens says all Juniper's partners — which include Siemens and Ericsson, in addition to Lucent — are "in some stage of evaluation" of the low end of Juniper's router product line or its security products.

## Nortel's enterprise aspirations

So perhaps Juniper and Lucent understood why rival Nortel retained its \$2 billion enterprise operations after many expected the company to sell, spin off or otherwise detach it this summer to make up a profit shortfall. Nortel CEO Bill Owens considered that but held onto it because the enterprise market is driving convergence — and service provider business.

In an interview with Network World in August, Owens said he recognized that Nortel's enterprise business — a distant second to Cisco in Ethernet switching — is a "leader" in bundling packet switching systems for companies looking to integrate voice, video and security applications. He said these systems would be attractive to Nortel's service provider customers as customer premises equipment components of a managed service offering.

Owens also said the enterprise network market can springboard Nortel into the booming government vertical market, which he said is spending tens of billions of dollars per year in the U.S. alone (DocFinder: 4464). Enterprise network revenue accounted for 22% of Nortel's preliminary first half results of \$5.1 billion, contributing more than the company's traditional markets of wireline (17.5%) and optical (10%).

Some enterprise network users say they are very comfortable buying their gear from telecom vendors.

"Some of the products we've seen coming out recently are things we've been looking for," says Howard Rubin, director of IS at healthcare network Care New England in Rhode Island, a Nortel shop.

"So they seem to be responding to their customers' requirements," he says. ■

# Biometrics benefits, challenges aired

■ BY JEFF CARUSO

NEW YORK — In a conference room overlooking the site of the World Trade Center, early adopters of biometrics technology last week stressed the importance of determining someone's true identity.

Attendees of the Fall 2004 Biometrics Summit heard about the challenges and benefits seen by those who would implement biometrics both before and after the Sept. 11 attacks that put a greater focus on security. They also heard about why some companies still aren't ready for biometrics, technology that uses personal characteristics of users to identify them.

Acknowledging that most of the Sept. 11 attackers used drivers' licenses to board the airplanes they used as weapons, one presenter said biometrics should be a key tool in conjunction with better verification of identity-proving documents, in the process of obtaining drivers' licenses.

Illinois was the first to use facial recognition technology in its Department of Motor Vehicles, four years before Sept. 11, and the state is preparing an upgrade to its systems, said Beth Langen, administrator of the policy and programs division of the Driver Services Department in the Illinois Office of the Secretary of State. The measures have helped combat fraud, catching those who try to get multiple licenses for different identities.

"One guy came in a couple of times a day to different facilities, to get licenses," Langen said. Another woman had 13 identities and used them for theft. She was caught and imprisoned. In all, 1,700 cases of fraud have been discovered using the facial recognition software, with 173 people claiming three or more identities.

Originally the department had considered using fingerprint readers, but went with facial recognition for several reasons. It's passive and non-intrusive. "When you come to a DMV, you expect to get your picture taken," Langen said. By contrast, people associate fingerprinting with having been arrested, she said.

Huge volumes of pictures have been added to the department's database. It now contains 16 million pictures, and it is growing by 8,000 to 12,000 every day. At night,

the system goes through all the new pictures to see if any faces match those already on record. If there are some that look similar, they are sent to a fraud unit in the morning, which compares demographic data and signatures to determine if the similar-looking people are one and the same.

Getting employees acclimated to using biometrics equipment was a challenge discussed by those at the conference.

Clarendon Insurance Group in New York installed fingerprint readers both for entry to the building and for logging on to computers. The insurance company was

helped by identity management software vendor Daon, which made sure users were prepped for the shift to biometrics.

Working with Clarendon's human resources department, Daon put together "welcome packs" for users, said Leo Ring, vice president of business development at Daon. The pack contained little stuffed koala bears — because they are the only animal with fingerprints — and wipes for keeping the fingerprint readers clean.

Before getting buy-in from users, buy-in from top executives is paramount. Scott Sykes, group manager of strategic technology

at Capital One in McLean, Va., encountered a lot of resistance to his ideas for bringing biometrics technology into the financial services firm.

The fundamental point of resistance was whether the reduced risk, cost savings and increased efficiency outweigh the expense, Sykes said. A lot of the potential benefit is hard to quantify. But the cost is easy to measure: \$5 million over the first two years, tapering off to \$400,000 per year for maintenance and operation.

While one could argue that biometrics provides security benefits over a password system, are the

benefits that much greater?

"Getting security folks to release the use of a password is very difficult," Sykes said.

Single sign-on can be difficult to integrate with biometrics systems. Biometrics readers aren't built into laptop or desktop computers, making the readers a hassle to add into a network. Privacy concerns are also an issue. Until these hurdles are overcome, biometrics will have a hard time getting a foothold in most enterprise companies, Sykes said.

"There's really no pull. There's really no push. It's kind of in 'levitation' right now," he said. ■

## BEA pitches integrated business bundles

■ BY ANN BEDNARZ

BEA Systems this week is expected to announce plans to pool its infrastructure software with partner technologies in combinations the company says will help solve its customers' business problems.

On tap are five different bundles built around BEA's WebLogic Platform 8.1 and incorporating hardware, software and services from BEA partners. The bundles are intended to streamline business processes that span multiple applications and data sources.

The Customer Service framework combines BEA's application infrastructure software — including its development tools, application server, portal and integration server — with technology from partners including Hyperion, EMC's Documentum division and Interwoven.

It's designed to help companies improve customer service while reducing the expense of serving customers through different channels such as the Web, call centers and mobile devices, BEA says. The vendors have done the upfront work to integrate their applications.

For example, a company could use WebLogic tools to build a portal from which customers can file service requests, pay bills and check the status of prior transactions. Then, with technology from speech application specialist SandCherry, companies can make those online resources available to mobile users through

### Framework logic

**BEA is teaming with partners to pitch technology bundles — called "solution frameworks" — aimed at easing integration and process management chores.**

Framework	Target application
Customer Service	Links customer-related data from disparate applications and packages it for Web, phone and mobile users.
Employee Service	Uses workflow and integration tools to automate human resources processes such as adding an employee, administering benefits, and performance reviews.
Service Delivery	Helps telecom companies speed services rollouts by linking development tools with operations support systems.
Trade Processing	Integrates financial services trade management applications to streamline execution.
Radio Frequency Identification	Uses event integration and business process automation tools for supply-chain processes related to RFID wireless inventory tracking.

a voice user interface.

In this way, users "don't have to build separate silos for Web, call center, mobile and voice," says Mark Atherton, vice president of BEA's enterprise solutions group. "There's one infrastructure that brings it all together so companies can expose the same content, through different partner technologies, to different channels."

Another framework being introduced this week is aimed at helping financial services companies streamline complex trade management processes. BEA's Trade Processing framework includes portal technology — for handling institutional trades, filtering re-

necessary connections.

"You don't have to actually drop down into those systems themselves. They provide the logic and the capabilities that you want to have, but it gets abstracted up a layer," Atherton says.

Taking advantage of pre-integrated resources could make development tasks easier, says Rajan Jena, enterprise architect at Oncology Therapeutic Network (OTN). The San Francisco company, which provides oncology medical practices with products and services including distribution of cancer drugs, launched an employee portal earlier this year that pools data from multiple customer service applications.

In the past employees had to toggle between four or five screens to find all the customer data they needed, Jena says. Now the information is presented in a single interface that masks the complexity of the systems integration.

For its employee portal, OTN wrote code to expose data from different applications, such as an Oracle financial application. Next up, OTN plans to deploy an external-facing portal for its customers and partners, which include medical practices, pharmaceutical vendors and biotech companies. For that project Jena hopes to take advantage of available "partnership-level APIs" from BEA and its vendor partners. "We expect this to help us avoid writing a whole bunch of data access level code that we're doing right now," Jena says. ■

# Predict Virus Outbreaks?



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# Infrastructure

■ LAN/WAN SWITCHES AND ROUTERS  
 ■ ACCESS DEVICES ■ SERVERS ■ VPNS  
 ■ OPERATING SYSTEMS ■ NETWORKED STORAGE  
 ■ VOIP ■ WIRELESS NETWORKS

## Switch vendors crunch Gbit chips

### Smart Takes

■ **IBM** has beefed up its storage virtualization and automation software. At Storage Networking World last week, the company unveiled improvements to its **TotalStorage Open Software**.

This software suite includes TotalStorage SAN File System 2.2, SAN Volume Controller 1.2.1, Productivity Center 2.1 and Tivoli Storage Manager 5.3. The SAN File System has been enhanced to allow for information life-cycle management capabilities. It now lets IT create policies that determine the movement of data from one storage array to another. It also lets customers create policies that govern when files are deleted. TotalStorage SAN Volume Controller, IBM's virtualization software, now can cluster as many as eight nodes and handle four times the number of virtual disks per cluster. It also supports attachments to HP Enterprise Virtual Arrays and IBM's DS8000 and DS6000. The SAN Volume Controller starts at \$30,000. The SAN File System starts at \$10,000 per processor for the File System's Metadata Server and \$5,000 per processor for application servers that use the file system. The software is expected to be available before year-end.

■ **Cisco** last week launched Version 4.1 of its CallManager IP PBX software, broadening support for VoIP encryption to Cisco voice gateways and voice mail servers. Enhanced Q.SIG support was introduced in **CallManager 4.1**. Call encryption on Cisco VoIP gateways can let users in remote offices conduct secure IP phone calls. Encryption on Cisco Unity voice mail can be used to help prevent malicious users from stealing voice mail files. Expanded Q.SIG support lets a Cisco IP PBX communicate with a legacy PBX via the Q.SIG protocol — a standard for PBX interoperability. Enactments in the new Cisco software let CallManagers talk to a wider array of PBXs and translate more features between the platforms, the vendor says. Cisco CallManager 4.1 is free for CallManager 4.1 licensees.

■ BY PHIL HOCHMUTH

Companies such as Broadcom and Agere Systems are working to squeeze more Gigabit switch port controllers onto one chip. For switch buyers, this could result in lower-cost, feature-rich gear that is less prone to failure.

It's a job with contradictory goals for these switch component makers, which must think both big and small — bigger as in bandwidth, smaller as in the size of the components they make. They face the same challenge as makers of any business or consumer computer gadgets, from blade servers to laptops, PDAs or cell phones — producing smaller, faster and less expensive products. But the biggest problem is heat and power consumption.

Along this line, Broadcom in October released a low-power Gigabit Ethernet physical layer transceiver chip for Gigabit Ethernet switches, blade server interconnects or server network interface cards. The vendor says its chipset consumes 25% less power than its previous Gigabit Ethernet physical layer transceivers, but still provides enough signal power to transmit Gigabit Ethernet over "marginal" copper

cabling plants, such as Category 5 or older Category 5e wiring.

This month, chipmaker Agere will launch a 48-port Gigabit Ethernet switching system that fits on a single system-on-a-chip product. The product has seven sub-components and uses less than half the number of chips as competing system-on-a-chip vendors, Agere says. The vendor also says its product takes up 30% less space than 48-port Gigabit chips that are currently shipping. This can help switch vendors pack more feature-based ASICs and network processors into a system, while reducing the complexity and potential for failure, of a 48-port chip system.

Part of this chip-crunching exercise is the conversion of the analog physical layer (PHY) processing components of a switch connection to a digital process. This lets the PHY component be built into the other Layer 2/3 switching pieces of the product.

"We've moved a lot of complexity in PHY into the digital domain," says Ngazi Bell, marketing director at Agere. "You're able to have better signal-to-noise ratio because bit-error rate management happens digitally."

Bell says this type of work is being out-

sourced to silicon vendors, as switch vendors look to cut costs and focus on advanced features, such as management or security.

Switch makers "are trying to add value at the software and applications layer where they can differentiate themselves," Bell says.

He says these smaller systems also lead to more reliable end products. "Having only seven components in a 48-port switch reduces the complexity, heat and power consumption," which makes products less prone to failure, he says.

Agere and Broadcom both supply Ethernet semiconductors to 3Com, Cisco, Extreme Networks, Foundry Networks, Nortel and others.

Switch vendors are demanding more ports in a tighter space, and this is driving new technologies from component vendors.

"Density is certainly being driven up by switch vendors, which is a result of demand from end users," says Zeus Kerravala, an analyst with The Yankee Group. "More users and nodes connected to the network mean more [port] density is

See Chips, page 20

## WLAN vendors target branch offices

■ BY JOHN COX

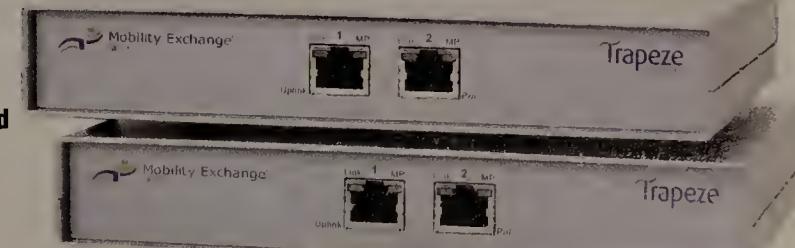
Wireless LAN rivals Airespace and Trapeze Networks separately have announced switches aimed at branch offices or other small locations.

To tailor these products for this market, both companies have simplified business practices, product installation and configuration. The switches are designed to support a handful of the vendors' companion wireless access points and to link over WANs with larger central switches installed on enterprise networks.

The Airespace 3500 has the full capabilities found in the vendor's larger switches, says Jeff Aaron, senior manager of product marketing for Airespace. These include automatically changing channel assignments and radio power levels, load balancing, location services and full network management via the vendor's Airespace Control System application.

For the new switch, Airespace has added QoS features, based on the Wi-Fi Multi-

**The \$1,000 Trapeze MXR-2 WLAN switch supports a variety of WLAN security specs, including RADIUS, 802.11i and 802.1x.**



Media (WMM) specification, which is a preliminary version of the draft IEEE 802.11e standard. Using WMM, the switch can be set up to reserve bandwidth for delay-sensitive traffic, such as wireless VoIP phone calls, and give that traffic priority on the network. Also new in the operating system software is support for IPv6.

Up to three Airespace 802.11a/b/g access points can be connected directly to the switch's four 10/100M bit/sec Ethernet ports, with one port reserved for the network connection. Or the switch can manage up to six of these access points that are

connected to an intervening Layer 2 or Layer 3 device.

Security features include support for 802.1x authentication and 802.11i-encryption and key management.

Pricing starts at \$2,000, and the 3500 will be available this month.

Meanwhile, Trapeze recently unveiled the MXR-2 WLAN switch, with a list price of just under \$1,000. The MXR-2 can support up to three Trapeze access points, called Mobility Points. The access points attach to a local Ethernet switch or WAN gateway, and so

See WLAN, page 20

**WLAN**

continued from page 19

does the MXR-2. There are two 10/100 Ethernet ports, one of which supports Power over Ethernet, so the access points can draw electricity from the switch.

Trapeze created a delivery process that ships the new switch directly to a customer's branch or remote offices, which could number in the hundreds or even thousands. There, the MXR-2 can be removed from its packaging and plugged into the nearest outlet and into the office's WAN connection, such as DSL, T-1 or a cable modem. The MXR-2 switch uses a discovery protocol over the WAN to connect to a Trapeze switch at a headquarters site.

From there, the MXR-2 can download its configuration and security settings, and then set up its local access points. For example, a network administrator in headquarters can determine who is allowed to use the branch office WLAN and what authentication policies will be used.

Once the MXR-2 is configured it can support local WLAN users.

As with the Airespace device, it supports an alphabet soup of common WLAN security standards, such as Transport Layer Security, RADIUS authentication, 802.11i and 802.1X.

The MXR-2 will be available by year-end. Other WLAN switch vendors are attacking the same market. Aruba Wireless Networks sells the Aruba 800, priced at just under \$3,000, and Symbol Technologies has the WS 2000 switch, priced at about \$1,000. ■

**Chips**

continued from page 19

required."

In addition to high port density, advances in LAN switch components are letting these tightly packed ports support new features and perform advanced tasks.

"Most switches are line-rate now, without oversubscribing any ports," Kerravala says. "And almost everybody has the capability now to do routing on the blade, instead of sending traffic back to a central processor blade on the switch for router table look-ups."

Tighter engineering of Gigabit components is the main driver for lowering the price of LAN switch gear. Since 1999, the average price of a Gigabit Ethernet port has dropped from about \$900 to around \$200, according to Dell'Oro Group.

Lower prices are sparking high demand for Gigabit switch products, which is helping drive the market for Ethernet silicon. According to IDC, the market for LAN

switch chips grew from \$1.8 billion in 2002 to more than \$2 billion last year. Broadcom, Intel, Marvell, Agere and LSI Logic led the market.

Analysts say network switch vendors will continue to rely on network silicon makers to squeeze cost out of making LAN gear.

"Cisco set the bar for the rest of the industry" by pushing high growth and profit margins in the 70% range for LAN gear, Kerravala says. "This forces all vendors to play catch-up and reduce costs."

"It's all about cost reduction through chip reduction," says Sean Lavey, an analyst with IDC. "As [switch makers] rely on vendors in Taiwan to build cheaper boxes, this drives chip vendors to create products that are more integrated and can be reused across multiple product lines."

Switch makers now will use a few chip vendors and spread those silicon components out across multiple product lines, Lavey says. ■

**Switch chip crunchtime**

**Makers of components and chips for LAN switches are moving in these directions:**

**Faster:**

More and more switch components now include 10/100/1000M bit/sec Ethernet technology, anticipating the move to desktop Gigabit Ethernet.

**Denser:**

Chip makers are crunching multiple switch interfaces down to one, with as many as 48 Gigabit Ethernet ports on a single piece of silicon.

**Cooler:**

To combat heat build-up in compact systems, component makers are using optical connectors inside components, which run cooler and draw less power than copper circuitry.

## Dell to pre-install SuSE Linux on servers

■ BY LAURA ROHDE

Dell will install Novell's SuSE Linux operating system on Dell PowerEdge servers as part of a worldwide agreement, the companies announced last week.

Novell's SuSE Linux Enterprise Server 9 will be available on PowerEdge 1850, 2800 and 2850 servers for an annual subscription per single-CPU server for \$192

or \$202.

For its part, Dell already pre-installed market-leader Red Hat Linux from Red Hat. Although Dell offered SuSE Linux, it only did so as a customized system option for which customers paid extra.

Dell and Novell began working together last year, and the two companies announced a bundling deal last summer.

"It's pragmatic for Dell because Novell

has a strong existing customer base, and they are now basically offering customers a choice of the two distributions," says Neil Macehiter, a research director at Ovum.

Novell gained the SuSE Linux kernel with its January acquisition of German company SuSE Linux.

*Rohde is a correspondent with the IDG News Service.*

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# Packeteer software fights network congestion

■ BY TIM GREENE

Packeteer is issuing software for its traffic-shaping gear that makes it easier for customers to resolve network problems.

Part of the company's Packeteer 7.0 software for its PacketShaper appliances, the Adaptive Response feature can be configured to resolve problems automatically. So if a particular host shows bandwidth use that spikes beyond a set threshold, the device can drop traffic from that host or limit the bandwidth available to it until someone can check whether the spike is warranted. The device also captures packets when the threshold is broken, analyzes the traffic and generates incident reports.

Packeteer has developed 11 software tools called template agents that automate responses to particular incidents. For instance, the Suspicious New Application template looks for applications that haven't run on the network before and that exceed bandwidth limits. The templates guide administrators to set up parameters for responding to the incidents.

Templates can help manage traffic, creating lower WAN bills. A customer that buys a WAN service with three different service-quality levels might find that most of the time the lower quality, less-expensive services are good enough for an application. They then can set the



Packeteer PacketShaper appliances now can help users better control application traffic.

PacketShaper to designate the less-expensive QoS for that application. If the provider's QoS dips below a predefined level, PacketShaper can retag that application's packets to be treated to a higher, more-expensive QoS level until the lower-priced service bounces back.

The company competes against Allot, Expand Networks and Peribit Networks, which each offer a mix of software and analysis tools, says Jerald Murphy, senior vice president of technical research services for Meta Group, making comparisons difficult.

The new software zeroes in on network bandwidth use by user. Previously, it could report on how much bandwidth an application in aggregate was using, but not which users were responsible. So the software now can sort traffic going through firewall Port 80, which handles HTTP traffic, but also could be used for screening peer-to-peer traffic or streaming media, for instance. ■

## WIRED WINDOWS

Dave Kearns



# Google's desktop search engine falls short

gated to another partition before disaster happens. Google's indexes will start big and grow bigger with every document you read.

The application saves its own copy of everything indexed — Word documents, e-mails, and even instant messages. That's the second problem. This will index everything you view including spam, Web pages you land on accidentally, every IM — all the ephemera of our daily existence. But not Adobe Acrobat files. PDFs are beyond the range of this desktop engine. Without the ability to index all text files and interactively keep and remove files from the index, this app is a no-brainer but it's the brain that designed it that I'm talking about.

*Kearns, a former network administrator, is a freelance writer and consultant in Silicon Valley. He can be reached at [wired@vquill.com](mailto:wired@vquill.com).*

## Tip of the Week

**T**omorrow is Election Day. Learn the issues, study the candidates then make an informed decision.

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**REUTERS** 





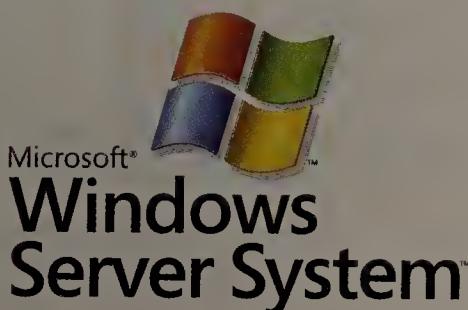
"We have 3,000 servers at customer sites worldwide. My team of four manages, monitors, makes changes, and does upgrades without leaving our desks."

**Saori Fotenos**  
IT Manager, *Reuters*

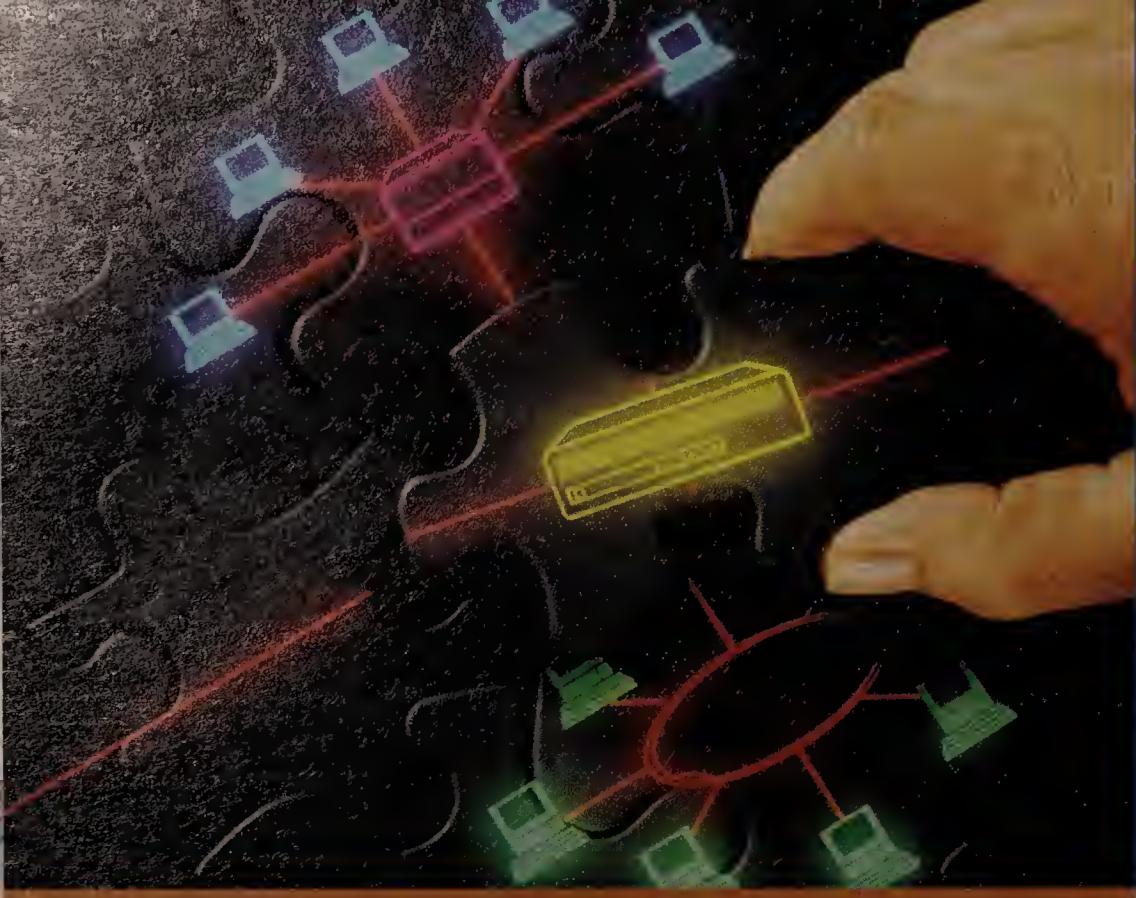
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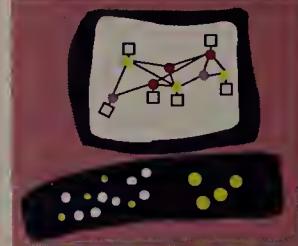
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# Enterprise Applications

■ PORTALS ■ MESSAGING/GROUPWARE  
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 ■ MIDDLEWARE ■ DIRECTORIES  
 ■ NETWORK AND SYSTEMS MANAGEMENT  
 ■ WEB SERVICES

## Short Takes

■ **Yahoo** and **Adobe** have entered an alliance aimed at improving Yahoo's Internet search tool while possibly turning more content into PDFs. The companies last week launched a co-branded toolbar featuring Yahoo's search, pop-up ad blocker and AntiSpy products alongside a Web-based service from Adobe that lets users create and access PDF files online. Adobe will alert Acrobat Reader users that the toolbar is available for download when it issues its next minor update in about a week, the company said. The companies plan to add features that would let users convert Web-based content into Adobe PDF files.

■ **IBM** last week introduced a security service that offers a concise, monthly global-network threat report designed to help organizations assess security needs and vulnerabilities.

**The IBM Global Business Security Index** compiles threat information from some 2,700 IBM security professionals and half a million monitored devices, the company said. IBM security intelligence and consulting experts then analyze the data to rate the potential severity of IT threats. IBM is selling the report to businesses as a new IBM Security Intelligence Services offering. The report can be customized by industry and starts at a base price of about \$10,000 to \$15,000 per year. A portion of the report will be available every month for free on the company's Web site, IBM said.

■ Windows tools vendor **Winternals** announced last week software that recovers operating systems and applications from Windows servers, workstations and laptops. **Recovery Manager 2.0** also can be used when deploying Windows security patches in that it can return a system to a known good state if the patch causes the system to malfunction. New features in include the ability to recover program files, registry settings and user data. Recovery Manager 2.0 costs \$400 per server.

## Exchange road map overdue

Users look to Microsoft for future direction of messaging platform.

■ BY JORIS EVER

After Microsoft removed the 2006 Kodiak release of Exchange Server from its product road map earlier this year, its plans for the messaging software have gotten even cloudier, making it more difficult for users to make future plans for the messaging package.

In May the company said it would deliver in 2005 an addition to Exchange called Edge Services, an intelligent message transfer agent for the edge of a company's network that offers security, spam and virus protection. The software maker now is backpedaling on that commitment, which was the only announced release for Exchange beyond 2004.

"We remain very committed to Edge Services," says Kim Akers, a senior director in Microsoft's Exchange Server group. But when asked to confirm the stated ship target of 2005, she said "it is premature to talk about timing."

With no product road map, it is difficult for customers to make licensing decisions

and plan upgrades, analysts say. "Microsoft owes it to its customers to specify and deliver more or less on time the products and updates they say are coming," says Peter Pawlak, an analyst with Directions on Microsoft, an independent research firm.

The onus to provide a road map is on Microsoft, Pawlak says, because the company sells customers multi-year licensing contracts that includes Software Assurance, a maintenance program that also covers software updates.

While Microsoft is making it difficult for corporations to anticipate what is coming down the product pipeline, the company is delivering incremental updates to Exchange, says Teney Takahashi, a market analyst at The Radicati Group.

"I think Microsoft is focused on making these small improvements," he says. "In a perfect world, all of that road map information would be available. Microsoft is taking its time to develop these products right. I think that is more important than offering a road map for five years, although I can understand if corpora-

### Exchange change

The use of the newest releases of Microsoft's Exchange messaging system is expected to grow.

Users (in millions)



### Forecast by the end of 2005



SOURCE: THE RADICATI GROUP

tions are getting frustrated."

Recently, Microsoft released the Exchange Best Practices Analyzer, a tool to help users fix configuration problems. In

See Exchange, page 28

## New software checks configurations

■ BY ELLEN MESSMER

St. Bernard Software this week will unveil SecurityExpert, a scanning tool that will let customers check Windows 2000, XP, Internet Explorer and Microsoft Internet Information Server to make sure the desktop and server software is properly configured.

If SecurityExpert determines that user or administrative rights, in addition to registry settings, are not securely configured, it offers network managers several recommendations for making changes.

"If not set properly, configuration settings present tremendous vulnerability that can be taken advantage of by the outside," says St. Bernard's CEO John Jones. SecurityExpert is being sold as an option with St. Bernard's UpdateExpert, Windows-based software for applying patch management and updates to Windows and Macintosh machines.

Jones says St. Bernard expects customers will want to couple both procedures, patch management and systems-

### Security blanket

The first release of St. Bernard's SecurityExpert will have about

17,000

expert recommendations for more than 7,000 system security settings.

setting management, through a console-based tool.

SecurityExpert systems configuration is based on recommendations from several sources, including Microsoft, the two security groups Center for Internet Security and SANS, the government-backed CERT, and U.S. and Canadian security agencies.

In instances where all these sources don't

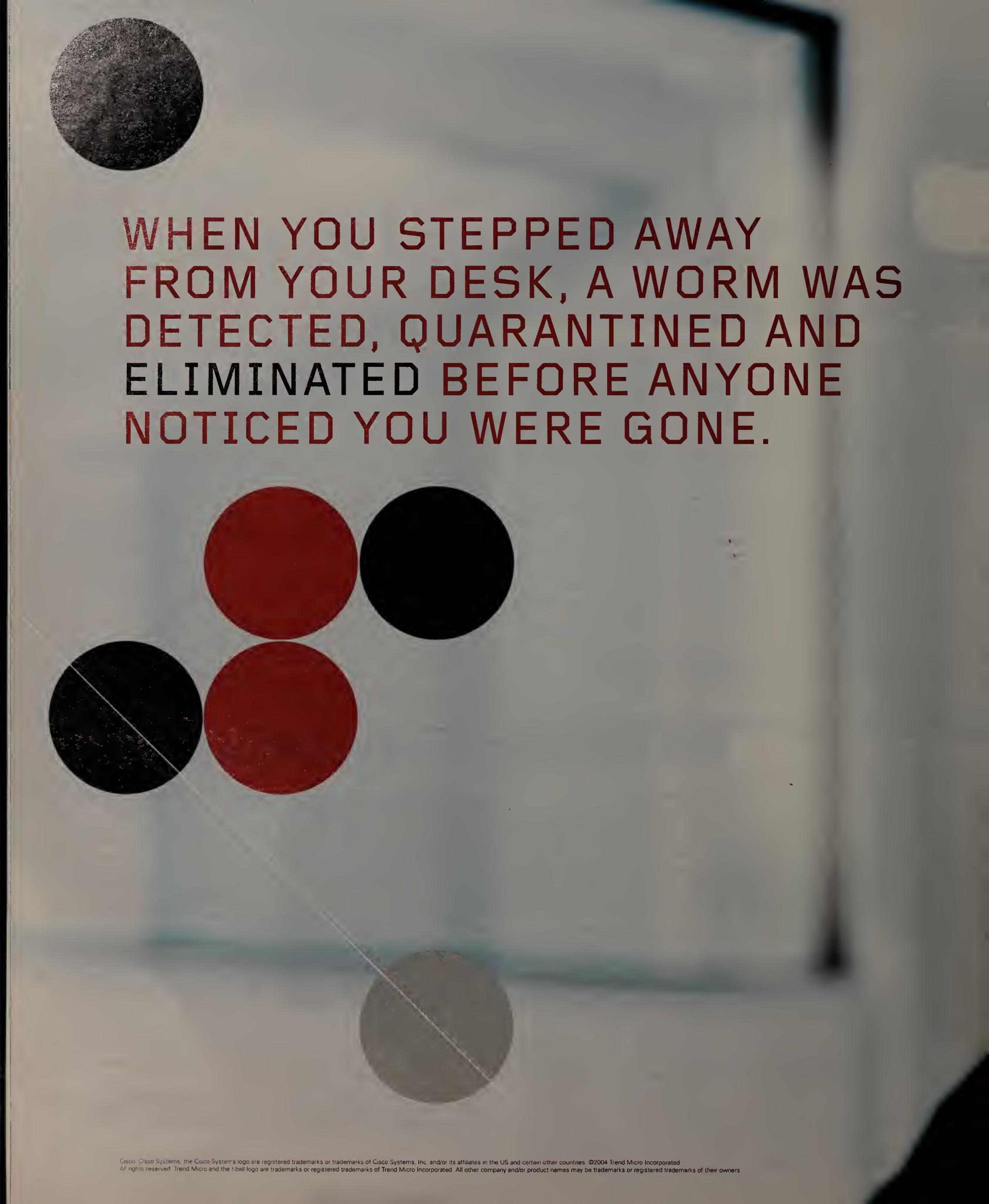
agree on security settings, SecurityExpert will highlight the different recommendations after running a network query of Windows-based computers. SecurityExpert will indicate which choices various sources prefer.

If the customer decides to stay with the recommendations made by the National Institute for Standards and Technology or National Security Agency, for example, the choice for NIST or NSA is made and the configuration settings are pushed out to the computer.

The first release of SecurityExpert, which ships this week, will have about 17,000 expert recommendations for more than 7,000 system security settings. The tool provides a way to audit, enforce and report on the machines based on assigned policies.

SecurityExpert competes against many configuration tools on the market, including those from Configuresoft and Microsoft.

SecurityExpert costs \$1,680 for 50 machines, which includes UpdateExpert. ■



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'NET INSIDER

Scott Bradner



## Misapplied faith

by state election officials in California and Florida show how hard it is to get officials to acknowledge that there are any possible problems here. Too many officials seem to be far more interested in simplicity than in accuracy or security. Many also seem to be interested in covering their tails after believing the marketing hype and buying millions of dollars' worth of voting machine products that many observers now are questioning.

Someday I expect a way will be figured out to support secure and reliable Internet voting that will, at the same time, preserve the secrecy of the vote. But I expect that will take quite a bit of time to work out and even longer to convince people that it meets the criteria. Until then those of us who vote (not enough do, by the way) will have to go to a polling place or get an absentee ballot. When doing so, too many of us will be confronted by repackaged PCs masquerading as voting machines.

Since June, *The New York Times* has run a series of editorials about voting in the U.S. (DocFinder:4427). The editorials, 19 to the date of this writing, have covered the gambit of voting-related issues — including some disturbing reasons why some election officials might be so willing to defend electronic voting or voting machines (DocFinder: 4429). Demonstrating the importance of the issue, eight of the editorials concern electronic voting or voting machines. The latest editorial provides a road map of what Congress should do to "give us the democracy we deserve" (DocFinder:4429).

Most of the specific suggestions deal with voting process rules, but the last one calls for securing electronic voting: "Mandatory safeguards, including a paper trail, for electronic voting. Election officials like to say that electronic voting is as secure as it can be, but that is false. Nevada regulators, for example, impose far more stringent checks on slot

machines than any state does on electronic voting. Congress should impose much more rigorous safeguards, including a requirement that all computer code be made public. It should require that all electronic machines produce a voter-verified paper trail."

I hope that Congress pays attention to these recommendations. Maybe four years from now, we will be able to go to the polls and not have to rely on the same kind of faith in trusting the machine we vote on as we have to in trusting the people we vote for on the machine.

**Disclaimer:** I expect that Harvard's school for studying faith (the divinity school) does not deal with faith in computers, but I did not ask, and the above is my own view.

*Bradner is a consultant with Harvard University's University Information Systems. He can be reached at sob@sob.com.*

# CipherTrust takes 'control' of spam

Updated IronMail appliance rejects spammers' connection requests.

■ BY CARA GARRETSON

E-mail security vendor CipherTrust is adding a new feature to its IronMail gateway appliance designed to boost the product's performance by identifying and rejecting incoming spams without having to process them through anti-spam filters.

Called Connection Control, this feature is implemented as a free software download. It takes historical information an IronMail appliance collects regarding an IP address' propensity to send out unwanted messages and rejects connection requests from those known spam sources, says Matt Anthony, director of product marketing with CipherTrust.

The feature relies on IronMail's Spam Profiler software, a collection of anti-spam filters and techniques, to pinpoint IP addresses that have been known to send out spam in the past. It then cross-checks that information against CipherTrust's Trusted-Source reputation service that identifies sources of wanted e-mail. As a result, IronMail can detect which IP addresses are sending an organization spam and automatically reject connection requests from those addresses, Anthony says. IronMail administrators can chose for how long messages are rejected from IP addresses that have been flagged as spam sources.

Connection Control "is the first

stop. Once we've identified these senders, we don't need to look at their e-mail to determine it's bad stuff," he says. By automatically

scan, the company says.

One e-mail administrator who began testing the Connection Control feature last month has

**"Without some way to stop the [unwanted] mail from even coming in to the appliance, we would end up having so many appliances that it wouldn't be cost-effective."**

**Franklin Warlick**

Messaging systems administrator, Cox Communications

rejecting connection requests from known spam sources, IronMail becomes more efficient because it has less e-mail to

seen a drop in the amount of mail the appliance must process.

"Without some way to stop the

[unwanted] mail from even coming in to the appliance, we would end up having so many appliances that it wouldn't be cost-effective," says Franklin Warlick, messaging systems administrator at Cox Communications in Atlanta, which uses six IronMail appliances to manage the 60,000 in-boxes on its corporate network.

Warlick says he also likes that Connection Control sends an SMTP message back to the sender telling them their e-mail has been rejected, which requires some bandwidth to receive, he says. "There's a little bit of payback" to the spammers, Warlick says.

There is still the possibility that Connection Control could reject a wanted message by mistake, Anthony acknowledges, but it's highly unlikely given the unusual sending patterns of spammers, such as sending high volumes of mail in a short period of time, that make them easy to identify. And wanted e-mails are often resent, while spammers don't tend to resend messages that are rejected in such a manner, he adds.

Connection Control is available from CipherTrust this week. The company's IronMail appliance competes with offerings from IronPort, Proofpoint and other gateway appliance makers. ■

## Exchange

continued from page 25

May, Microsoft introduced a spam filter for Exchange Server 2003 called Intelligent Message Filter, and earlier this year the vendor released the first Service Pack for Exchange Server 2003.

Philip Colmer, IT manager at ProQuest Information and Learning in Cambridge, England, is happy with the Exchange Server 2003 system he upgraded to at the beginning of the year. Colmer says he is not looking for another upgrade anytime soon.

"I am not too bothered at this point in time that Microsoft has not made any announce-

ments about a new product," he says. "Nevertheless, customers traditionally do expect road maps from Microsoft."

A year after releasing Exchange Server 2003, Microsoft heralded the success of the product last week at an Exchange users event in Orlando. However, attendees didn't hear much about the future of Exchange because Microsoft is not ready to publicly discuss the Exchange road map, including plans for a new version, Akers says.

At the Exchange Connections event the company announced it sold 55% more licenses of Exchange Server 2003 in the first year after its release than it did with predecessor Exchange 2000 Server. The vendor also has had more than 175,000 requests for eval-

uations of the product, and more than 31,000 people have participated in Microsoft's Exchange Server 2003 classes.

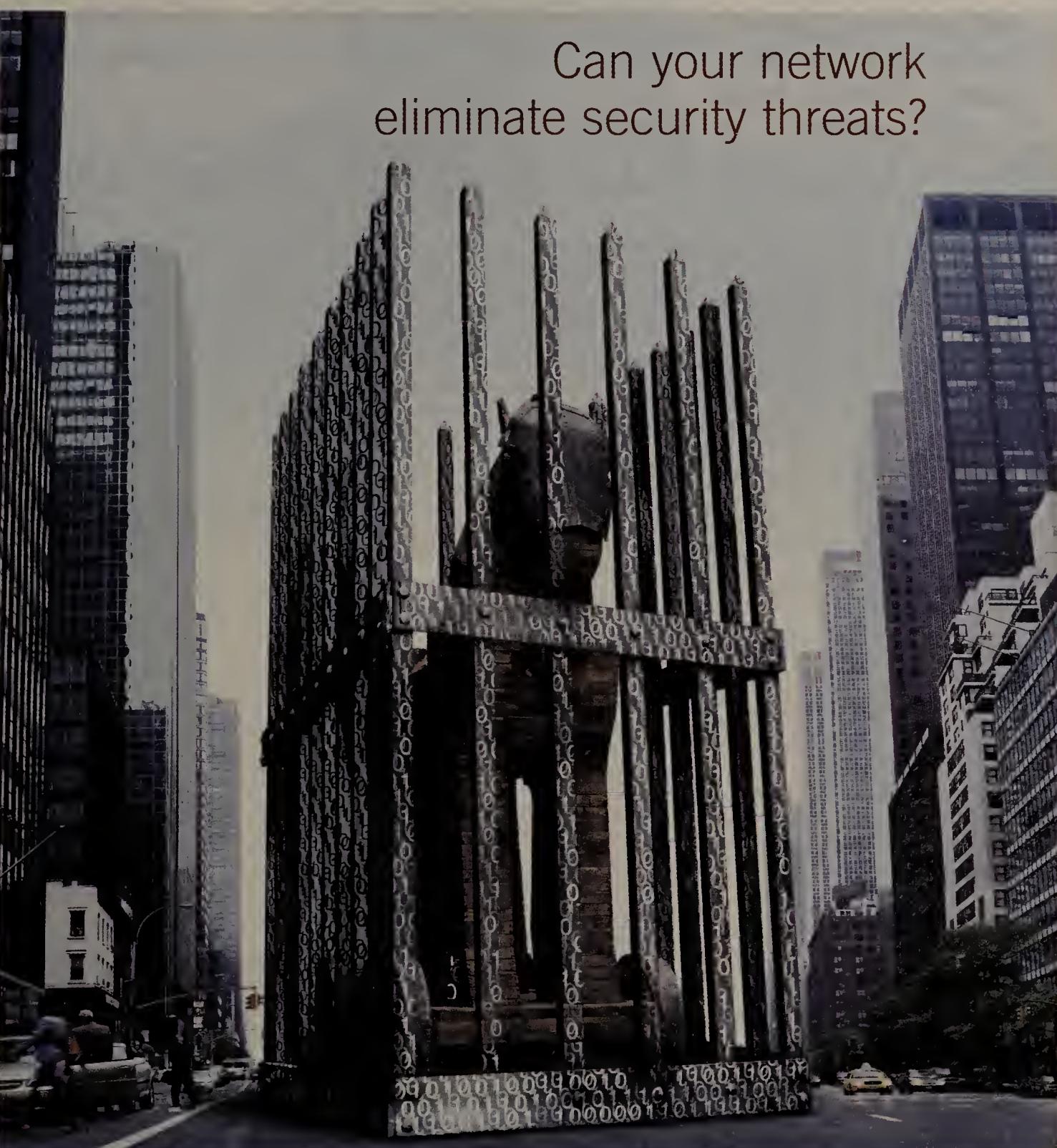
Still, Microsoft faces a challenge in getting customers to upgrade. The Radicati Group expects the number of Exchange Server 2003 seats won't exceed the number of Exchange 5.5 or Exchange 2000 seats until the end of 2005, Takahashi says.

*Evers is a correspondent with the IDG News Service.*



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# Service Providers

■ THE INTERNET ■ EXTRANETS ■ INTEREXCHANGES AND LOCAL CARRIERS  
 ■ WIRELESS ■ REGULATORY AFFAIRS ■ CARRIER INFRASTRUCTURE DEVELOPMENTS

## GXS to inherit IBM's EDI business

■ BY ANN BEDNARZ

Global eXchange Services stands to become the largest player in an industry some predicted would continue to falter and eventually die out altogether. Instead, today's value-added network service providers are mulling a comeback as increasingly complex business integration efforts have companies looking to outside providers for help.

Technology investment company Francisco Partners — which is the majority owner of GXS — recently announced plans to buy IBM's Electronic Data Interchange (EDI) and Business Exchange Services units for an undisclosed sum.

The two lines of business serve companies that need to exchange documents electronically with customers, suppliers and business partners. IBM's EDI business includes its traditional EDI VAN contracts, while its Business Exchange Services unit includes more modern, Internet-based EDI services that let users send and receive EDI data via the Web.

EDI VANs "have been much more resistant than almost anybody thought they would be," says Ken Vollmer, principal ana-

lyst at Forrester Research. One reason is their reliability. Another is that VAN providers have lowered prices to allow more favorable ROIs, he says.

After the completion of the deal, Francisco Partners plans to merge the two IBM units into GXS. The combination of these rival businesses will make GXS the industry's largest EDI player, boasting more than 40,000 direct and indirect customers, says Bobby Patrick, senior vice president of marketing at GXS.

IBM's strength in the financial services sector and its operations in Latin America and Japan are particularly important to GXS, Patrick says. GXS will continue to operate IBM's proprietary VAN platform as part of a long-term outsourcing arrangement with Big Blue, he says.

In selling its EDI businesses, IBM appears to have made a decision to focus its business-to-business integration efforts within its WebSphere Business Integration unit, Vollmer says. "IBM's EDI group has not been a high priority within IBM for some time. It makes sense to spin it out to someone who could focus on it."

Meanwhile, the challenge for GXS is to get customers interested in its growing appli-

### VAN resurgence

Over the next few years, the complexity of business-to-business integration will force

20%

of internally managed projects to switch some traffic back to value-added networks, Gartner predicts.

cation services portfolio, while at the same time continue to bolster its more open, Internet-based EDI network business.

Like rival Sterling Commerce, GXS gradually has reduced customers' dependence on legacy EDI VANs that require proprietary software, in favor of Internet-based

EDI services. The emergence of standards such as Applicability Statement 2 — which describes how to create a connection and securely transport an EDI file over the Internet — have spurred Internet EDI adoption.

Additionally, GXS has been working to diversify its business to include not only network services but also industry-specific application services. For example, it offers data synchronization services for its retail customers. GXS also closed its \$30 million acquisition of product information management vendor Haht Commerce earlier this year — a deal that adds packaged applications to its lineup.

That's the direction the industry needs to go, Gartner says. The research firm predicts that at least 35% of all new VAN revenue will be from bundled network and application hosting services by 2005, up from less than 10% last year.

See GXS, page 32

## Sprint rolls out wireless management services

■ BY DENISE PAPPALARDO

Sprint last week announced its first management system that lets users manage enterprise-wide wireless services and devices while also promising reduced costs and increased security.

The service provider launched Sprint Managed Mobility Service (SMMS) at CTIA 2004 in San Francisco. The management tool provides rate optimization, over-the-air software upgrades, security features and asset management features.

"Sprint is the only wireless service provider offering a set of management tools to its enterprise customers," says Philip Redman, an analyst at Gartner. He expects competitors to begin offering similar tools within the next year.

With Sprint's tool, customers can more easily manage their enterprise-wide pooled wireless minutes by ensuring individual users are on the best rate plans. SMMS customers also will be able to receive new applications, updated clients or download security patches for smartphone devices without having to dock the device.

### Management over the air

The Sprint Managed Mobility Services offering provides a variety of configuration, security, procurement and asset management features including:

- Software installs over the air
- Enforced use of power-on password
- Specified action to take if wrong password is used
- The ability to remotely erase the memory on a device if lost or stolen
- Guaranteed order fulfillment and delivery
- A rate optimization plan

The service also will let users deploy security clients on their smart phones that can be used to enforce security measures, such as requiring user ID and passwords be entered before each use. If a

See Sprint, page 32

## Short Takes

■ **Verizon** has selected **Motorola** to supply video network infrastructure and customer premises equipment for its fiber-to-the-premises network. Terms of the multi-year agreement were not disclosed. Verizon plans to launch video services on its FTTB networks next year. Verizon's FTTB build-out currently encompasses nine states. Motorola also will provide project integration and operational services.

■ After clearing Department of Justice and FCC hurdles, **Cingular Wireless** and **AT&T Wireless** have completed their \$41 billion merger, creating the nation's largest wireless carrier in terms of subscribers. The combined company, which will be known as Cingular Wireless, has more than 46 million customers, surpassing Verizon Wireless with 40.4 million cus-

tomers. It will have licenses to operate wireless service in 49 states and will serve the top 100 U.S. metropolitan areas. Cingular had to divest itself of wireless customers and other assets in 13 U.S. markets to gain approval for the merger. Stan Sigman, currently president and CEO of Cingular, will continue to serve as the president and CEO of the new firm.

■ **Hughes Network Systems** announced last week its Direcway Multimedia Service satellite-based multicast service that lets users distribute video content such as corporate television, Web conferencing, training and digital advertising daily or for special events. Users can pay a flat monthly fee for a specific chunk of bandwidth that's available throughout the month or pay only for what they use. The service costs \$3 to \$30 per month for .5M bit/sec of multicast bandwidth and from \$5 to \$74 per month for 1.5M bit/sec of multicast bandwidth. Prices are for existing Direcway satellite customers and vary based on number of remote sites.

## EYE ON THE CARRIERS

Johnna Till Johnson



In a previous column, I defined telecommunications as enabling remote communications between humans. Back in the last century that meant being able to project your voice and ears across thousands of miles — speaking and listening at a distance, in other words.

Extending that definition to other senses yields some interesting ideas. Take sight: Videoconferencing has been a decidedly mixed success, primarily because of the cost and complexity of current systems. However, there are signs that video is on the uptake. Many IT executives I've spoken with in the past few months have indicated that extending videoconferencing out to branch offices is a major driver for converged infrastructures.

But video's the unimaginative example. If you really want to stretch your brain, consider the cutting-edge research underway in the areas of sensor networks and nanotechnology.

Sensor networks are, as the name implies, networks of tiny embedded networks that gather data from remote locations and transmit it back to central sites for processing.

Applications include geology (sensor networks on volcanoes such as Mount St. Helen's help predict potential eruptions — Mount St. Helens buffs definitely shouldn't miss the volcanocam at [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 4345); the military (sensor networks on battlefields transmit real-time intelligence back to headquarters); and construction (sensor networks on buildings help provide real-time insight into building strains and stresses). For a relatively recent overview of state-of-the art sensor networking, check out the IEEE survey paper by researchers at Georgia Tech University

(DocFinder: 4346).

For a good list of current research underway on sensor networks, check out the University of Virginia site at DocFinder: 4347. It's easy to envision practical commercial applications for sensor networks, such as inventory tracking for retail and distribution, and process tracking for manufacturing.

But sensor networks represent only half the story. Picking up data and transferring it back to a centralized site for processing is interesting — but it's basically unidirectional transmission. Now couple that with a bidirectional communications infrastructure (for example, the central location can transmit information back to the remote sensors) and the ability for sensing devices to react and respond. A key way to make this happen is using emerging nanotechnology, which enables low-power actions. Coupling sensor networks to nanotechnology-enabled devices thus provides the ability to feel and move at a distance — thus dramatically extending

the definition of communication.

This combination of sensor networks and nanotechnology is sometimes referred to as an embedded network, and it's the topic of active research today. Even more intriguingly, some of the leaders in this area are folks who performed some of the cutting-edge research creating the early Internet, such as Deborah Estrin at UCLA, particularly at the National Science Foundation-funded UCLA Distributed Embedded Systems Program. Check out DocFinder: 4348 for more details.

Much of this stuff is so new that it verges on science fiction — but it's coming. Watch for an expansion of the definition of communications. Now instead of just speaking and listening at a distance, communications also can mean sensing and taking action at a distance.

*Johnson is president and chief research officer at Nemertes Research, an independent technology research firm. She can be reached at johnna@nemertes.com.*

## Carriers aim for MMS interoperability

■ BY STEPHEN LAWSON AND TOM KRAZIT

SAN FRANCISCO — U.S. wireless operators have created a plan for Multimedia Messaging Services interoperability across networks, the Cellular Telecommunications & Internet Association announced last week.

The carriers have agreed on a set of guidelines for interoperability of MMS, which lets mobile phone users add digital photos, sounds, video and other rich content to messages they send from one data-capable phone to another, said Steve Largent, president and CEO of the CTIA. The group expects MMS interoperability to be established by year-end, Largent said

during of a keynote presentation at the CTIA 2004 trade show in San Francisco.

Interoperability should drive up the use of MMS in the U.S. just as the establishment of interoperable short messaging service (SMS) has done, Largent said. Though the U.S. has lagged behind other parts of the world in SMS, usage here has soared with interoperability, he said.

So far, MMS interoperability in the U.S. has only been established between Cingular Wireless and AT&T Wireless Services, and users of other services have not been able to consistently send rich content to each other's phones, according to Chris Pearson, president of 3G Americas, an organization of GSM carriers. Cingular last week completed its acquisition of AT&T Wireless.

The keynote session also featured insights into the provision and selling of mobile multimedia services from two industry executives.

The next big drivers of mobile phone use will be multimedia and 3D gaming, said Paul Jacobs, president of Qualcomm's wireless and Internet group. General-purpose phones, not specialized handheld gaming platforms, will be the most popular platform for games, he added.

"It [may be] game over for the handheld gaming device," Jacobs said. Qualcomm-based phones are mass-market devices that can bring sophisticated gaming to a handset that exceeds the expectations of many average users, he said.

But as users play mobile games for an hour a day or so, battery life will be a growing problem, Jacobs added. Qualcomm is addressing that through its acquisition last

month of Iridigm Display, a maker of reflective displays. Screens made with the reflective technology take advantage of existing light, reducing backlight power requirements in both dim and brightly lit environments, extending battery life by four times in well-lit places, he said.

Mobile operators have done a good job marketing cool handsets and economical service plans but have fallen short in explaining multimedia services to subscribers, said Graeme Ferguson, Vodafone Group Services' executive head of content development, in a keynote address.

Operators need to identify their target markets, produce content that speaks to those consumers and make it easy to access and use, Ferguson said. With its Vodafone Live service, launched two years ago and now serving 19.8 million customers of Vodafone-affiliated carriers in 21 countries, the carrier focused on males aged 18 to 24 and delivered basic services such as games, news, radio, sports and chat.

Despite the need for carriers to deliver attractive content packages, the mobile content market can't reach its full potential size without giving subscribers a way to reach third-party providers outside the "walled garden" of proprietary content, Ferguson added.

*Lawson and Krazit are correspondents with the IDG News Service.*

### Sprint

continued from page 31

customer's phone is lost or stolen, Sprint can send a short message service signal to essentially "zap" the phone of all its data.

Sprint says this is particularly important for PDA users who store corporate data on their devices. The carrier's over-the-air software upgrades and security features are only available to users with smart devices such as a Palm or Treo.

The SMMS service also offers features that make it easier to track all the Sprint wireless devices a customer has deployed throughout its company.

Although Redman says Sprint's offering is a good first step in bringing management tools to customers, he also says the service might not meet the needs of all enterprise users.

"Hardly any [midsize] to large businesses use one wireless service provider," Redman says. That means that a company could only take advantage of these management tools for a percentage of their users. Third-party management products from companies such as Traq Wireless or Digital Reliance cover services and devices from all a customer's service providers.

Most business users would rather have one system they can use to manage services from multiple wireless service providers, he says.

Sprint says that a handful of users are testing the service, including Newsweek and Mutual of Omaha.

According to Redman, Sprint will charge \$5 to \$15 per user, per month, for the SMMS service. Sprint would not confirm the pricing, but says it will announce specific fees early in the first quarter when the offering is available. ■



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# Special Focus

**CABLE MSOS:** Local presence, price and bandwidth are key to winning accounts from telcos.

## Cable operators target business accounts

■ BY JIM DUFFY

**T**hink your cable TV company is just for video and residential VoIP? Think again. Cable multichannel operators are building a strong presence as providers of business telecom services, particularly to small and midsize businesses.

In the U.S. alone there are approximately 5.4 million SMBs, about 98% of which are passed by upgraded cable facilities, according to Current Analysis. U.S. businesses will spend roughly \$3.2 billion on cable modem services this year, as compared with an estimated \$3.3 billion for DSL services, according to In-Stat/MDR.

"It's small businesses — doctors' offices, car dealerships — those kind of places that have some data needs but don't have heavy-duty data needs," says Lynda Starr, an analyst at Probe Group.

In 2003, SMBs spent about \$2.15 billion on "value-added" data services — broadband services, voice-over-X (VoIP, VoDSL and others) services, VPN services, managed services and other telco-delivered services provided over the wide-area data network. They spent the largest portion — 36% — of their wireline data service budgets on such services, the firm found.

"They're in the areas that are already passed by the cable systems," Starr says. "The residential market is pretty well saturated; there's not a lot of new business to be had. [MSOs] have to increase the revenue per subscriber they have or find new types of subscribers."

At-home workers and telecommuters also continue to drive broadband adoption. Nearly one-third of the U.S.

**“[Charter] offered us bandwidth that was 100 times greater than what the phone company offered us, at about one-fifth the price. Obviously, the choice was easy to make.”**

**Jeff Gibson**

Technology supervisor,  
Wisconsin Rapids School District

workforce, or 44 million individuals, is expected to work at home on at least a part-time basis this year, according to In-Stat/MDR.

The firm expects that number to grow to 51 million telecommuters by 2008, nearly 14 million of whom are expected to work from home full time. Cable outpaces DSL in terms of number of subscribers in the U.S. business at-home workforce, In-Stat finds.

Cable company Cox Communications is finding a lucrative business in offering enterprise services. The company's Business Services unit, which was launched in 1998, provides data, voice and transport services to more than 100,000 customers.

Cox Business Services' customers include Boeing, First

Fidelity Bank and MGM Mirage resorts. Its products and services include: dedicated data transmission up to OC-192 speeds over fiber, T-1 and ATM, and VPN; Internet access; switched voice and long-distance; video services; Web hosting and e-commerce; and carrier access services.

The Cox unit generated revenue of more than \$287 million in 2003, a 25% increase over 2002. The company expects annual growth to continue in the mid-20% range.

"We focus for the most part on customers that are in our [local access] footprint that have 100% or maybe 80% of their needs in our footprint," says William Stemper, a Cox vice president, who came to the company 14 months ago after 25 years at AT&T. "So by definition, we pick up a different type of a customer than AT&T."

Ninety-five percent of Cox's business customers have 100 or fewer employees. Total telecom expenditures within the company's region is more than \$8 billion annually, Stemper says, and business customers within 100 feet of the network spend about \$3 billion annually.

"We think there's a fair amount of growth ahead of us," Stemper says.

### Location, location, location

Traditional telcos also are gunning for that business. Cox's differentiator is local presence, Stemper says.

"We're embedded in the community," he says. Local Cox officials "are not wiring Atlanta headquarters for approval. That allows us to be very nimble, very intimate with the customers. These are customers that use our services when they're at home and have done so for a long time. So they understand our brand."

Cox also has a technological differentiator over the telcos in its region, Stemper says. The cable operator can offer higher-speed, higher-throughput 6M bit/sec cable modem services within its footprint while business DSL services from the telcos tops out at 3M bit/sec.

But the telcos have a much bigger regional footprint than the cable operators and have had so for a long time, Stemper notes. They also serve a broader customer base than Cox can, he says.

But Cox is looking to broaden too. It kicked off a National Enterprise campaign earlier this year to attract the business of larger, Fortune 500 companies needing local services.

"We're not providing them a nationwide VPN network," Stemper says. "We serve their local needs of how they link up a call center and a data center and an administrative office. Or how they might be backing up data centers."

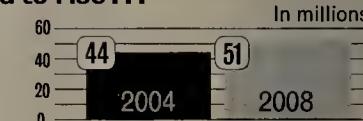
Stemper says Cox is culling through lead data generated from the campaign. But he says it so far has led to a "strong uptick" in orders from all customers, not just large corporations.

One such customer is Care New England. The Rhode Island healthcare consortium had outgrown its Internet service and required higher-speed interoffice links between five main healthcare organizations and 50 remote doctors' offices and labs.

Cox set up a virtual-area network to connect the major sites, pulled fiber into three hospitals and selected remote locations, and connected the rest of the remote

### Leaving home

**With the number of at-home workers expected to rise ...**



**... and SMBs spending billions on data services**

• Wireless data services spending in 2003: **\$5.97 billion**

Value-added data services spending in 2003: **\$2.15 billion**

**... cable companies have high hopes to expand beyond their residential customer base.**

Projected cable modem service spending by U.S. businesses this year: **\$3.2 billion**

• Projected DSL service spending by U.S. businesses this year: **\$3.3 billion**

SOURCE: IN-STAT/MDR

sites to the VAN over 384K bit/sec cable modem links.

Care New England chose Cox over a traditional telephone company because of "flexibility" and cost, says Howard Rubin, director of IS. "They're easier to work with, more flexible in terms of meeting our requirements, and they were able to price [our network] at a lower price.... No issues with service at all."

The only snag, Rubin says, is when Care New England purchased some telephony services from Cox. The cable company was "a little tight" on direct inward dialing numbers, he says.

"It's difficult for all the organizations to get numbers right now," Rubin says. "But other than that we have no complaints."

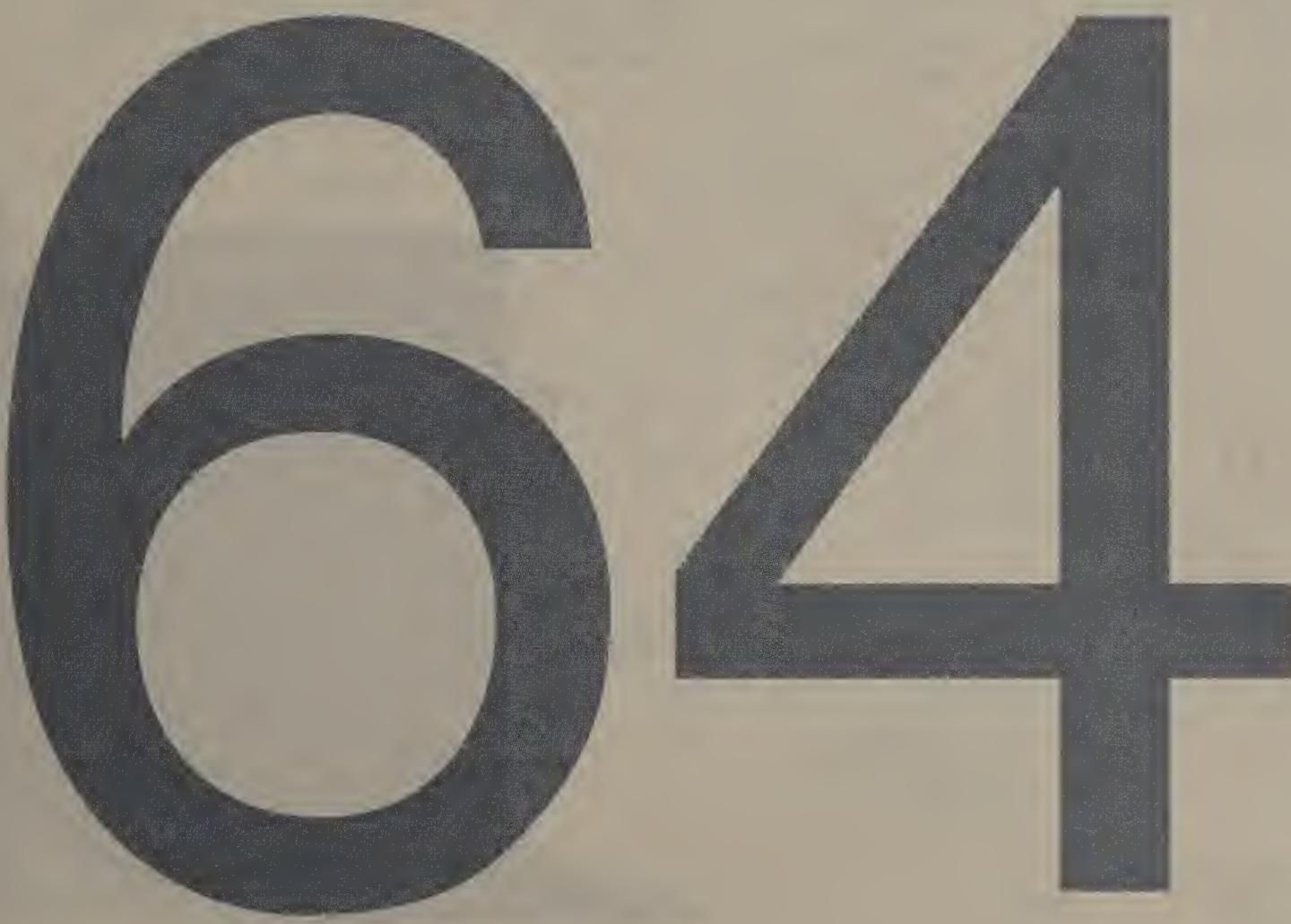
### Also in the game

Charter Communications is another cable operator with a unit dedicated to deliver business services to corporations. Its Charter Business group does about \$225 million in sales annually, and is growing about 26% per year.

Charter declined to be interviewed for this story, citing a quiet period before releasing third-quarter earnings. But Charter customer Wisconsin Rapids School District contracted with the cable company to connect 12 sites using OC-3 ATM over fiber and 100M bit/sec switched virtual circuits between sites.

"We had a choice between Charter and the local telephone company," says Jeff Gibson, technology supervisor for the school district. "At the time, Charter was in the process of wiring our community. So when we asked for quotes, they saw it as a way to piggyback on their existing project. They offered us bandwidth that was 100 times greater than what the phone company offered us, at about one-fifth the price. Obviously, the choice was easy to make."

Charter does not yet offer voice telephony service in the school district's region; but if it does when the district's current contract is up in two years, Gibson says it will be considered. ■



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# Technology Update

■ AN INSIDE LOOK AT THE TECHNOLOGIES AND STANDARDS SHAPING YOUR NETWORK

## LLDP-MED simplifies VoIP deployments

■ BY PAUL CONGDON AND DAVID FRATTURA

Many companies seeking cost-effective, easily managed VoIP systems face deployment obstacles because of the diversity of convergence products in the marketplace. Corporations also are challenged by the obligation to support Emergency Calling Services (ECS) that include E911, which is often made more difficult by the lack of standards.

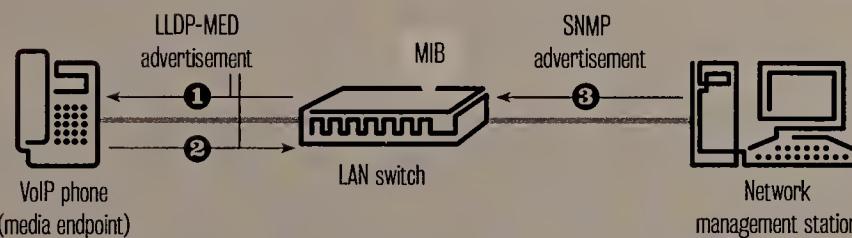
The Telecommunications Industry Association (TIA) aims to make it easier to deploy and troubleshoot VoIP networks. The draft TIA standard, Link Layer Discovery Protocol-Media Endpoint Discovery (LLDP-MED), facilitates information sharing between endpoints and network infrastructure devices. Such data will simplify the deployment of endpoints, enable advanced device firmware management and boost support for E911 in enterprise networks.

LLDP-MED is based on the IEEE's 802.1AB LLDP, which is slated to become a standard this month. LLDP is IEEE's neighbor discovery protocol, which can be extended by other organizations. (See [www.nwfusion.com](http://www.nwfusion.com), DocFinder: 4424, for a Technology Update on LLDP.) Information gleaned from network devices such as switches and wireless access points aids in troubleshooting and enables management systems to create accurate views of the network's topology.

LLDP-capable devices periodically transmit information in messages called Type Length Value (TLV) fields to neighbor devices. This information includes chassis and port identification, system name, system capabilities, system descrip-

### ■ HOW IT WORKS

**LLDP-MED**  
TIA's draft standard lets endpoints and network devices exchange media- and IP telephony-specific information, aiding in VoIP deployment.



- 1 The switch transmits the power capacity of its ports, the expected virtual LANs for voice systems, the DiffServ Code Point for media traffic and a location attribute that represents where the cable attached to this port is.
- 2 The VoIP phone transmits its power requirements and power priority, the expected VLANs for voice systems, the DiffServ Code Point for media traffic and the inventory information about itself.
- 3 The network management system queries the LAN switch for detailed inventory information for VoIP phones, and uses this information to build accurate topology maps of the data and voice infrastructure.

tion and other attributes. LLDP-MED builds upon these capabilities by adding media- and IP telephony-specific messages that can be exchanged between the network and endpoints. The new TLV messages will provide detailed information on Power over Ethernet, network policy, media endpoint location for Emergency Call Services and inventory.

The Power over Ethernet Management TLV lets endpoints advertise the power level and power priority they require, and lets network connectivity devices advertise how much power they can supply. These advertisements let switch vendors support advanced power management. For example, a switch could compare the power

required by the endpoint with what it can offer. If it does not have the capacity to meet the demand, it selectively could provide power to endpoints designated as having high priority, such as a lifeline IP phone.

The Network Policy Discovery TLV simplifies deployment of large multivendor networks and aids in troubleshooting. This TLV lets endpoints and switches advertise their virtual LAN ID, IEEE Priority and Differentiated Services Code Point (Layer 3 Priority) assignments to each other. Network administrators can quickly locate misconfigured endpoints. While IEEE 802.1AB is not designed to be used for configuration, it is possible for vendors of endpoints to let these devices modify their set-

tings when a mismatch is discovered between the endpoint and network.

LLDP-MED's Inventory Management Discovery TLV lets an endpoint transmit detailed inventory information about itself to the switch to which it is attached. This information can include vendor name, model number, firmware revision and serial number. When a switch receives this information, it will be stored and be made accessible to the network management system for inventory reporting.

Finally, the TIA is considering LLDP-MED's ECS Endpoint Location Discovery TLV as a method to enable E911 within enterprise networks. While there are other standards under development, the LLDP-MED method is well suited for use where adds, moves and changes are common. The TLV contains information related to the telephony wire map of the campus or other attributes that allow for the resolution of the endpoint's exact location. When an endpoint receives a TLV with ECS location data, it might store and use that data when it needs to communicate with a Public Safety Answering Point. This method ensures an endpoint is capable of discovering accurate location information no matter where it is moved to within the network.

Slated to become a standard in the first half of 2005, TIA's LLDP-MED is useful in converged networks by providing network policy, power, location and inventory data.

*Congdon is an HP fellow and CTO for HP Procurve, and Frattura is director of secure networks marketing for Enterasys Networks. They can be reached at paul.congdon@hp.com and frattura@enterasys.com, respectively.*

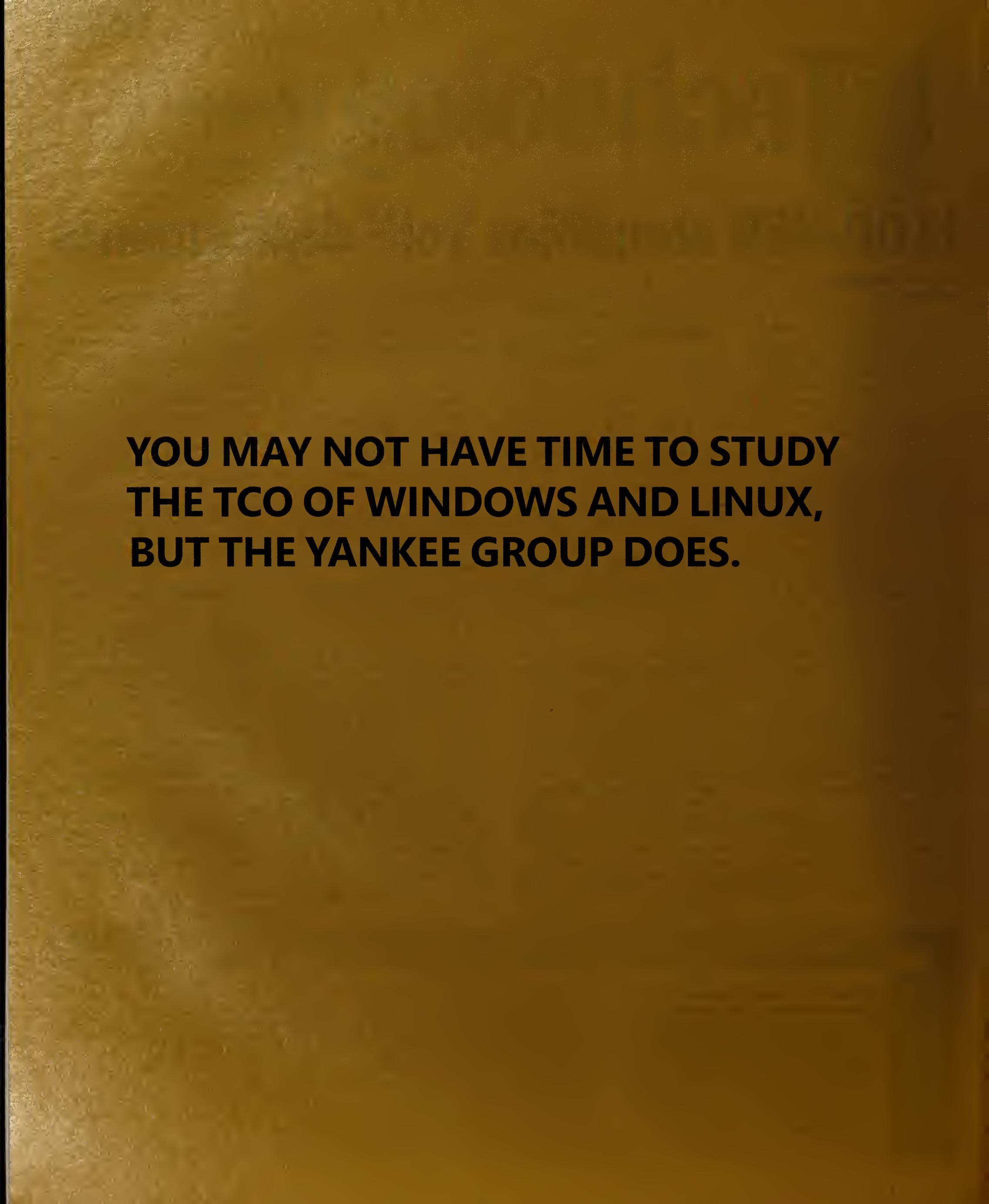
## Ask Dr. Internet

By Steve Blass

**We want software that takes commonly used industry paper forms and puts them in a SQL application. We want to hard-code or protect the wording so it can only be struck out and new words inserted in a different font with none of the existing form words changed or altered. We also want users to fill in the spaces provided with their information, and let the space grow or shrink depending on the amount of data input. Where should we start looking?**

The InfoPath forms we described in a recent column ([www.nwfusion.com](http://www.nwfusion.com), DocFinder: 4430) can do these things. If your audience is broader than Windows 2003 users, look towards open standards-based software, such as Xforms (DocFinder: 4431), or the XUL system used by Mozilla (DocFinder: 4432), which can build dynamic forms and communicate with back-end databases. An Xforms plug-in for Internet Explorer is available at [www.formsplayer.com](http://www.formsplayer.com). Mozquito Deng (<http://claus.packts.net>) is an Xforms plug-in in Macromedia Flash that works in browsers supported by Flash. The XMLSpy tools from [www.altova.com](http://www.altova.com) provide support for generating dynamic XML-driven forms for multiple browsers, and includes an end-user desktop editor for XML-based content.

*Blass is a network architect at Change@Work in Houston. He can be reached at [dr.internet@changeatwork.com](mailto:dr.internet@changeatwork.com).*



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*—Laura DiDio, The Yankee Group, April 2004  
Linux, Unix, and Windows TCO Comparison*

The Yankee Group, a global research and consulting firm, concluded that a significant switch to Linux from Windows or Unix could cost three to four times as much without delivering tangibly better performance or business value. These findings are based on a non-sponsored worldwide survey of 1,000 IT administrators and C-level executives in midsized and large enterprises.

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**GEARHEAD  
INSIDE THE  
NETWORK  
MACHINE**

Mark  
Gibbs



**W**e wonder if this column should be renamed "Last week we were ..." as that seems to be our standard entrée these days. But just to break the chain, this week we will begin a little differently: The week before last we started in with the question, "Are we missing something, or is Windows XP's TCP/IP implementation as pathetic as we suspect it is?"

We were trying to set up a multi-homed Windows XP machine but apparently could only do so if all addresses were configured as static IP addresses. In other words, it appeared if you had a single address assigned to a network interface card you could use DHCP, but if you had more than one you couldn't.

We were wrong about XP's TCP/IP implementation being pathetic — in this area, it isn't pathetic, it is merely eccentric. It turns out there is a way to multi-home a network interface card (NIC) under XP and use DHCP and static IP addresses.

The solution is obscure, and reader Jeff

Adams was the only person to write in with a link to a Web site called MCSEworld where there is a "how to" page on the topic of Windows multi-homing configuration written by Daniel Petri.

We are so impressed with readers like Adams that in the future we plan to refer to everyone who supplies an answer to one of these wonderfully obscure problems or provides us with any other cool information as Special Investigators. Thus, Jeff Adams will now be Special Investigator Jeff Adams (badge No. 001).

Anyway, the answer Special Investigator Adams provided can be found at [www.nwfusion.com/DocFinder/4434](http://www.nwfusion.com/DocFinder/4434).

Being the kind-hearted chaps that we are, we will summarize it for you:

First of all, we begin by assuming you have one IP address allocated on your NIC and it is set to be assigned by DHCP.

So far, so good. Now under XP and Win 98 you need to fire up Regedit (under NT and Win 2000 that will be Regedt32).

Under Win 98 find the root key "HKEY\_LOCAL\_MACHINE" and then find the subkey:

\System\CurrentControlSet\Services\Classes\NetTrans

Under all of the other versions of Windows look under the root key

"HKEY\_LOCAL\_MACHINE" for the subkey: \SYSTEM\CurrentControlSet\Services\TCPip\Parameters\Interfaces\

Under these subkeys you'll find all of the NICs in your PC listed by their COM Class Identifiers otherwise known as Globally Unique Identifiers (GUID). For example: {A8BF419B-8185-4396-B87A-2B6345BBC8E3}

Be careful to correctly identify which NIC the entry refers to — you'll find multiple GUIDs listed under each NIC in the registry.

When you've got the right one, you need to find the key "IPAddress" and double click on it. In the Edit Multi-String dialog that appears, enter in the Value Data field each of the static IP addresses you want to assign to the NIC, one value per line. Note that the first value — for no reason we can fathom — must be "0.0.0.0".

Now find the "SubnetMask" key and edit it exactly the same way you did the "IPAddress" key, again making sure the first value is "0.0.0.0".

For these settings to take effect under Win 98 you need to reboot, but for all other Windows versions you are supposed to be able to reinitialize the connection (find the entry under "Start Menu | Settings | Network Connections" followed by the

**We plan to refer to everyone who supplies an answer to one of these wonderfully obscure problems as Special Investigators.**

connection you edited and "Disable" then "Enable").

For some reason our desktop and notebook machines running XP could not get the changes to work by using disable then enable. We had to restart before the new configurations became active.

The bottom line on this registry tweak is that it would appear that simultaneous use of static and DHCP-assigned IP addresses was something that Windows was supposed to be capable of doing but it was just overlooked. Overlooked in all versions of Windows from Win 98 onward. How eccentric is that?

*Get your Special Investigator's badge at [gearhead@gibbs.com](mailto:gearhead@gibbs.com).*



## Cool Tools

Quick takes on high-tech toys  
By Keith Shaw

**A** recent IDC report says corporations are warming to the idea of converged mobile devices for their employees, as they realize that such devices can leverage personal and corporate data with more flexibility than desktop and notebook computers. Improved interactions with customers, better efficiencies with suppliers and even just letting employees make the most of their time away from their desks are some reasons that enterprise decision makers are finding favor with mobile devices, IDC says.

Because converged devices can handle both voice and data, companies are trending toward converged devices as opposed to something like a PDA. IDC estimates that corporations will buy 7.41 million converged devices in 2008, up from 1.5 million this year. Consumer shipments of the devices are even more staggering — 27.9 million converged devices in 2008 compared with 3.3 million this year.

Some new entries in the converged mobile



The Treo 650 now has a removable battery.

## It's good to be a mobile device

device market were announced last week. PalmOne announced the Treo 650 platform, an upgrade of its popular Treo 600 smart phone. Sprint announced it would be the first carrier to support the Treo 650, with devices available for \$600 at the end of this month. Sprint also announced a new Pocket PC-based device, the PPC-6601, marketed by Audiovox. The PPC-6601 is expected later this month for about \$630.

The Treo 650 comes in two flavors: one for a CDMA 1x RTT network, and one that supports the GSM/General Packet

Radio Service/Enhanced Data Rates for Global Evolution wireless networks. The Treo 650 features a high-resolution, 320-by-320 pixel resolution color display, has a removable and rechargeable battery, an improved embedded digital camera (palmOne says it works better in low-light situations), and a better backlit QWERTY-style keypad. The device now stores its data in non-volatile Flash memory which means users don't lose their data should the power run out on the device (something that has happened with earlier handhelds). The device also supports corporate e-mail access to Microsoft Exchange Server 2003 through its VersaMail software, palmOne says.

Other features include an Intel xScale processor (312 MHz), 23M bytes of storage space, up to five hours of talk time, up to 300 hours of standby time, a Secure Digital

I/O (SDIO) card slot and integrated Bluetooth.

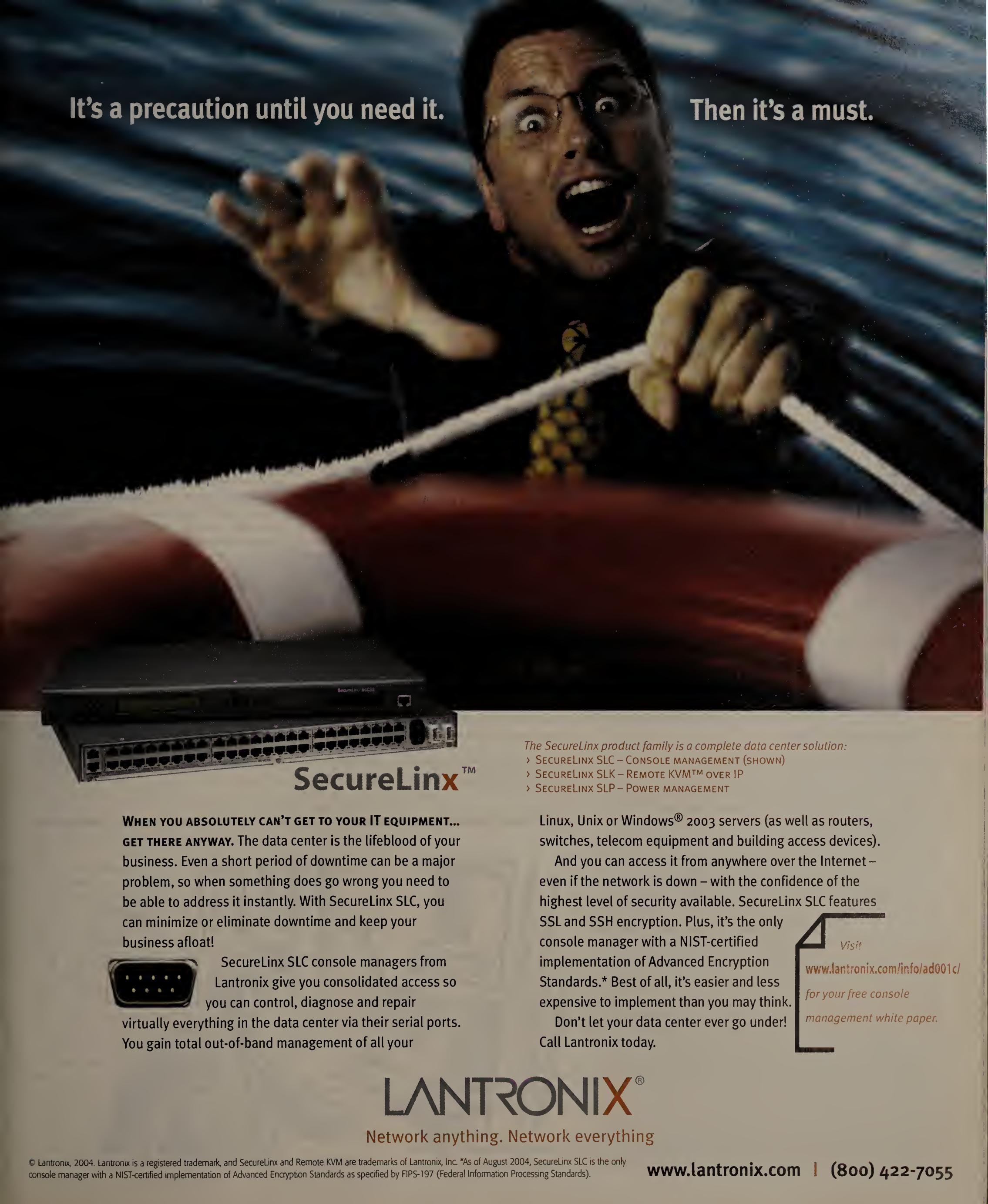
The PPC-6601 by Sprint uses an Intel xScale 400-MHz processor and runs on the Windows Mobile 2003 operating system (the Treo 650 runs on Palm OS 5.4). It offers 128M bytes of memory and lets users view, create and edit documents, including those from Microsoft Excel, Outlook and Word. The PPC-6601 supports Exchange ActiveSync for over-the-air synchronization of e-mail and calendar information with Exchange Server 2003. The PPC-6601 also has embedded Bluetooth and a built-in SDIO card slot, which lets users add additional storage or memory to the device. The device has a removable lithium ion battery that offers up to 3.6 hours of digital talk time and up to six days of standby time, Sprint says.

For the most part, both devices have the same lists of features — your final choice might come down to the types of applications you need to give your employees access to (and personal feelings toward one operating system over the other).



Sprint's PPC-6601 supports over-the-air synchronization with Exchange 2003.

*Shaw can be reached at [kshaw@nww.com](mailto:kshaw@nww.com).*



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## ON TECHNOLOGY

John Dix

## Keeping storage growth in check

Information life-cycle management, intelligent storage-area networks and virtualization were some of the topics that dominated the thriving Storage Networking World conference in Orlando last week, which was hosted by sister publication *Computerworld* and the Storage Networking Industry Association.

The 2,800-plus crowd heard from the CEOs of prominent vendors such as Hitachi Data Systems and Brocade Communications, and users from a range of vertical markets, from healthcare to manufacturing and retail.

The presentations by these buyers served to put the whole storage puzzle in perspective. The problem crested in 2000 when data was growing out of control and companies were ill-equipped to deal with it.

The data store at Northrop Grumman, for example, had mushroomed from 5T to 20T bytes in four years and by 2000 was growing 75% year over year, says Paul Seay, chief infrastructure architect.

"The amount of data created compared to actual business growth was not proportional," he says. "In the paper world we used to discard old information. We don't do that well in the digital world." So the company put the brakes on by getting smarter about what it stored and how it stored it, and today has slowed data growth to 35% per year.

That's still significant, Seay says, but it's a sign of the times. With more-sophisticated users relying more on smart applications, rich content and e-mail, he estimates each person generates 800M byte per year.

That's nothing compared with requirements in the medical community. Robert Cecil, network director for the divisions of Radiology and Cardiology at the Cleveland Clinic Foundation, says he acquires 2T bytes of data per week. When mammography goes digital the average file size will be 100M bytes. He estimates that by next year the hospital will be adding 5T bytes per week.

Oh, and the data is never deleted. It is critical for the lifetime of patients and can be useful for long-term medical trend analysis.

All of which helps explain why companies are so interested in ILM, which is broadly defined as a way to classify information according to its business value, and uses policies to move it among tiered storage to optimize for performance and cost.

Seay from Northrop says ILM is 90% policy and 10% technology. "You need customers to understand the value of data so they don't argue with you about how you handle it." That's why Northrop, in its ILM efforts, is focused on policy before technology.

— John Dix  
Editor in chief  
[jdix@nww.com](mailto:jdix@nww.com)

# opinions!

and Windows users. Furthermore, Mozilla provides a browser that is not only better, but also more secure.

Companies such as General Motors deploy OpenOffice in some locations. Others, such as AT&T, are seriously considering replacing Windows with Linux (according to Bloomberg News). I hope that in the future, you will present a more informed and balanced view of Linux.

Antonio San Marco  
Los Angeles

### Out of bounds

In his BackSpin column "Today's menu: Spam and Wine" (DocFinder: 4423), Mark Gibbs shows that he completely fails to understand the furor over the 2004 Super Bowl halftime show and has no inkling of why CBS was fined.

CBS was fined because it purchased the rights to broadcast the Super Bowl and the halftime show, and was completely responsible for content. The organization that produced the halftime show, MTV, is owned by CBS. The performers were under contract to CBS. It's only fair and fitting CBS was fined.

The Super Bowl is marketed as entertainment and was heavily promoted on CBS. Such a widespread marketing campaign obviously includes pre-teens and adolescents. If I took my 12-year-old son to a strip club, the state family services agency would be on me in a heartbeat. If a 25-year-old woman flashes a 10-year-old boy, the crime is "contributing to the delinquency of a minor." The halftime show was no different, and both performers involved should have been charged. This was a premeditated act (what else would account for the incredibly Internet-searchable phrase "wardrobe malfunction"?).

I still have a say in what my kids watch. I did not have a say in what I had expected to be a "family" halftime show that ended as a peep show.

Gerald Gosewehr  
Warrenville, Ill.

### Linux at the desktop

Regarding "Doing the desktop waddle" (www.nwfusion.com, DocFinder: 4422): Linux will never replace Windows until programmers make their applications generic enough that a person can install them on most Linux flavors without having to jump through compiles and dependency hoops. I've given up on more than one Linux application when I just got tired of trying to install it. Even the big Unix platforms have easier installers than I find in Linux. HP-UX and AIX have installers as part of the operating system that most programmers use for installation, rather than trying to do brute source compiles. A big breakthrough would be a generic Linux installer to which programmers could write.

Also, Linux documentation has a long way to go. I'm the first to admit that many Windows help screens are next to worthless, but documentation in Linux still seems to be as rare as hen's teeth.

Joel Tompkins  
Boise, Idaho

The story "Doing the desktop waddle" gets it wrong. Users don't need a proliferation of competing desktops; the Gnome and KDE user interfaces are more than enough. What routine and casual users want is familiarity and consistency. Clicking an icon on a KDE desktop is no more difficult than clicking one on a Windows XP desktop.

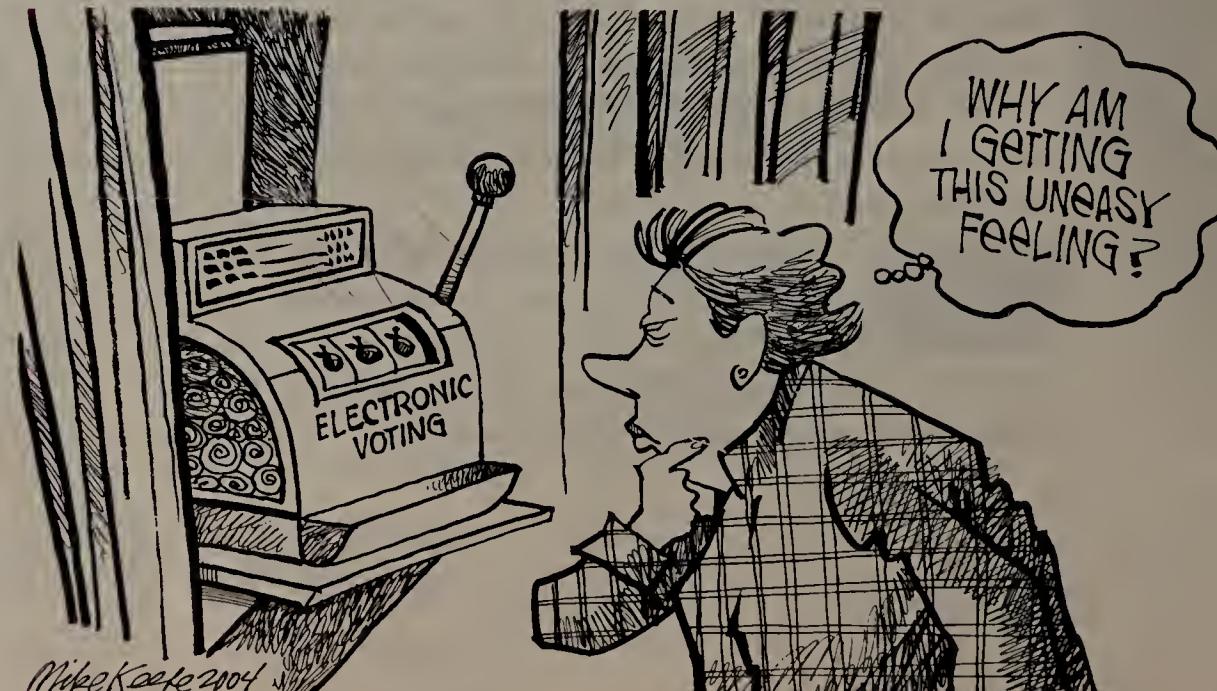
The story also neglects to mention the OpenOffice suite. Because OpenOffice is free, downloadable and usable on Windows as well as Linux, it provides an excellent way in which to effect an immediate cost reduction and take a "toe in the water" approach. In most instances, the .xls, .doc and other files OpenOffice produces are transparently interchangeable between Windows and Linux users or Windows

E-mail letters to [jdix@nww.com](mailto:jdix@nww.com) or send them to John Dix, editor in chief, Network World, 118 Turnpike Road, Southborough, MA 01772. Please include phone number and address for verification.



### More online!

[www.nwfusion.com](http://www.nwfusion.com) Find out what readers are saying about these and other topics. **DocFinder: 4421**





## USER VIEW

Chuck Yoke

**T**he best laid plans of mice and men often go awry, and leave us nothing but grief and pain instead of promised joy." Poet Robert Burns' words reflect many IT managers' sentiments regarding projects that started strong but ended miserably.

From over-budget enterprise CRM implementations to costly distributed Web infrastructures to highly touted network technologies such as ATM, IT has had its share of best laid plans that went awry. The problem is not that any of the technologies were overrated. Rather, the problem is that the planning process for these technologies was anything but best laid. Planning is not a strong suit of many IT organizations.

During the 1990s, there was a glimmer of hope for strategic architectural planning. Many organizations created in-house architecture groups that focused on integrated application, system and network planning. These groups were tasked with ensuring that the networks being deployed facilitated the applications being developed, which in turn were analyzed to ensure the correct systems were being deployed. The entire process was business-driven, ensuring the overall IT architecture met business goals.

After the dot-com bubble burst in the early 2000s, companies downsized IT and disbanded architecture groups. The focus was on point solutions that met short-term operational needs — which in itself wasn't bad. Unfortunately, many IT managers associated point solutions with "no planning needed," so the IT planning process diminished drastically.



## ABOVE THE CLOUD

James Kobielski

**M**iddleware is spaghetti that just keeps looping and layering new approaches over old. The industry keeps ladling more sauce over the mess, in terms of such nebulous nomenclature as enterprise application integration, enterprise information integration, business process management and message-oriented middleware.

The latest ingredient in the middleware recipe is the buzzphrase enterprise service bus (ESB). ESB has become primarily a marketing lure, promising simple, speedy, standards-based multipoint integration. Crack open most middleware vendors' literature these days and you'll find grandiose discourses on ESB that blur the boundaries between this approach and older paradigms.

If ESB has any substance, it's primarily as the latest approach for reliable, guaranteed messaging. ESB middleware products leverage Web services standards and interface with established reliable-messaging MOM protocols such as IBM's WebSphere MQ, Tibco's Rendezvous and Sonic Software's SonicMQ. Common features of ESB products include the ability to bridge heterogeneous MOMs, wrap MOM protocols with Web Services Description Language interfaces and tunnel Simple Object Application Protocol (SOAP) traffic over MOM transports. Most ESB products support direct, peer-to-peer interactions among distributed applications through intermediaries such as integration brokers.

Vendors differ in their ESB support, but it's clear the market category is broad enough to encompass traditional MOM vendors, plus middleware companies such as Cape Clear, Fiorano, IONA, Polar Lake, See-Beyond, SpiritSoft, Systinet and Vitria. Any company that offers a Java Message Service MOM provider or supports JMS APIs could position itself as an ESB vendor. Any vendor that implements the emerging Web Services Reliable Messaging (WS-RM) specification also can claim to provide ESB tools.

Of course, no ESB vendor would be content to offer just a reliable

# The best laid plans

Lest anyone e-mail me about their company's IT planning process, I will admit that IT organizations still make plans. Strategic plans are still written and distributed to senior management. Project plans are abundant and very detailed. But what's missing is the crucial planning that occurs between strategic goals and project-implementation plans. This is the area I call the "IT blueprint." Strategic planning states where IT is going. The IT blueprints details how IT gets there and how everything fits together.

This level of planning is crucial to the success of new technologies. Many companies have VoIP as a strategic goal. Some of these companies have specific project implementation plans for VoIP. However, without the IT blueprint showing where VoIP fits into the overall architecture, what applications will utilize it, what business units will benefit from it, what vendors will be utilized, how it will interface with the data network, and what the overall financial implications are in terms of timing and deployment, VoIP will wind up being another best laid plan that ultimately goes awry.

An IT blueprint is like the blueprint of a house. An architect might have a wonderful concept, and each subcontractor might have his individual detailed plans for plumbing, electricity and carpentry, but without a blueprint showing how everything fits together, the house probably will never materialize.

An IT infrastructure built without proper planning — whether from mice or men — is doomed to become another plan gone awry.

*Yoke is director of business solutions engineering for a corporate network in Denver. He can be reached at ckyoke@yahoo.com.*

**An IT infrastructure built without proper planning — whether from mice or men — is doomed to become another plan gone awry.**

# New buzzword, same old mess

pipe. So vendors throw everything into their ESB crockpots and stir vigorously. MOM, enterprise application integration, business process management, integration brokers, orchestration, data transformation, publish and subscribe, event notification, content-based routing, transactions — they're all ESB (or so the vendors say).

Enterprise IT professionals need integration products that are easy to install, configure, administer and manage. They need middleware that supports robust, standards-based, any-to-any integration. They need to address new integration requirements inexpensively and quickly, rather than in multi-year, high-risk, budget-busting megaprojects.

Can today's ESB products deliver all that? Hardly. The problem is not so much with today's products as with the plethora of middleware products, protocols and approaches that have taken root in many companies. Organizations have invested far too much money on middleware, and on integrating applications via legacy middleware, to throw it all out overnight and start anew. Most real-world integration environments feature middleware products from several vendors. Many of these were implemented in the context of particular tactical projects, or to integrate a specific set of applications, platforms and protocols.

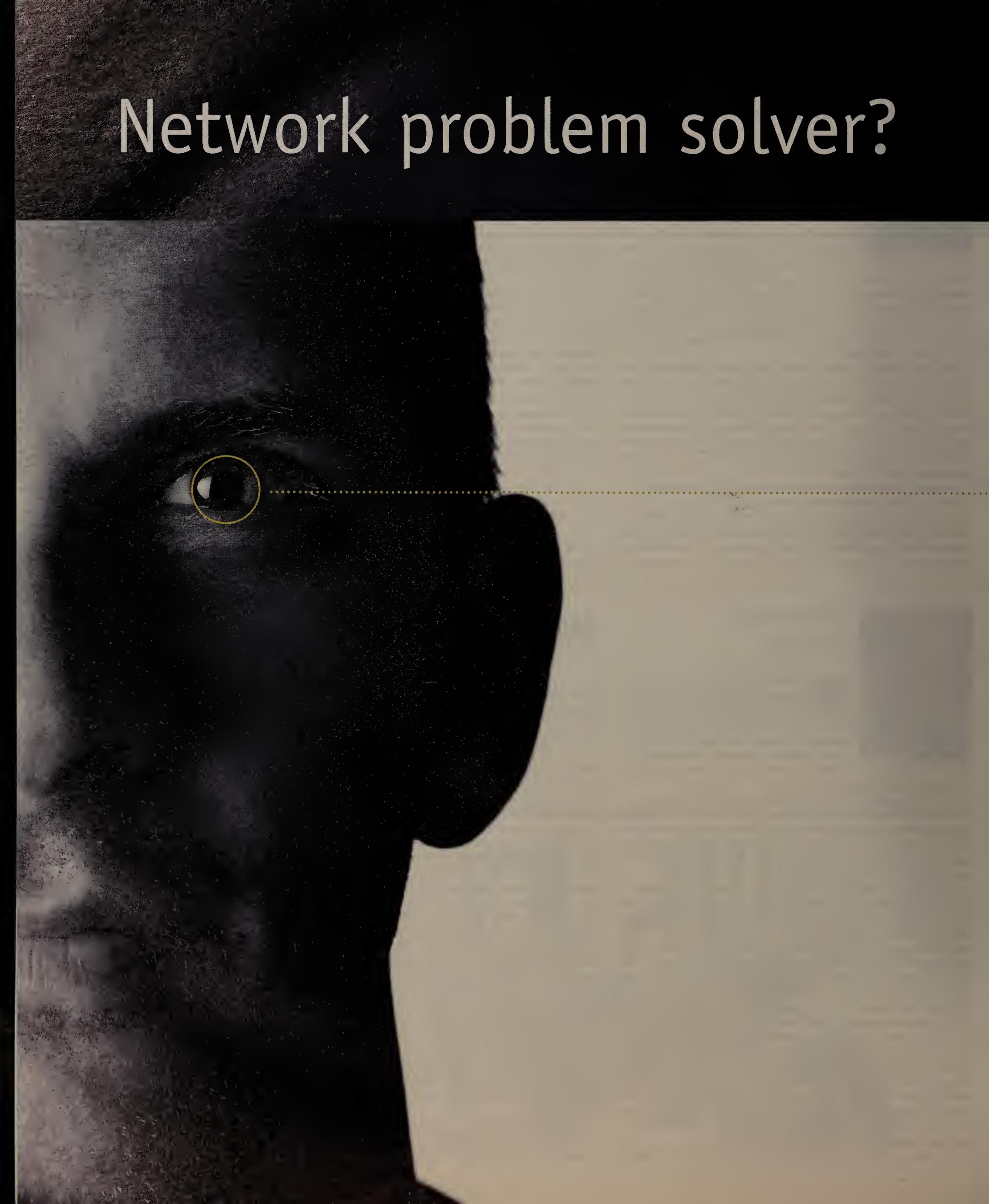
Consequently, there is no single enterprise-wide "bus" in most companies, and such a bus is not likely to emerge any time soon. No ESB product can provide a single-bullet solution to the dizzying range of integration requirements. The best that most organizations can do is layer standards-based integration environments over the stubborn heterogeneities of older environments.

The term ESB is just a catchall phrase referring to the convergence of MOMs and SOAP-based Web services. We shouldn't attribute more meaning to the term than it deserves. It's just an approach for connecting the middleware meatballs on our collective plates.

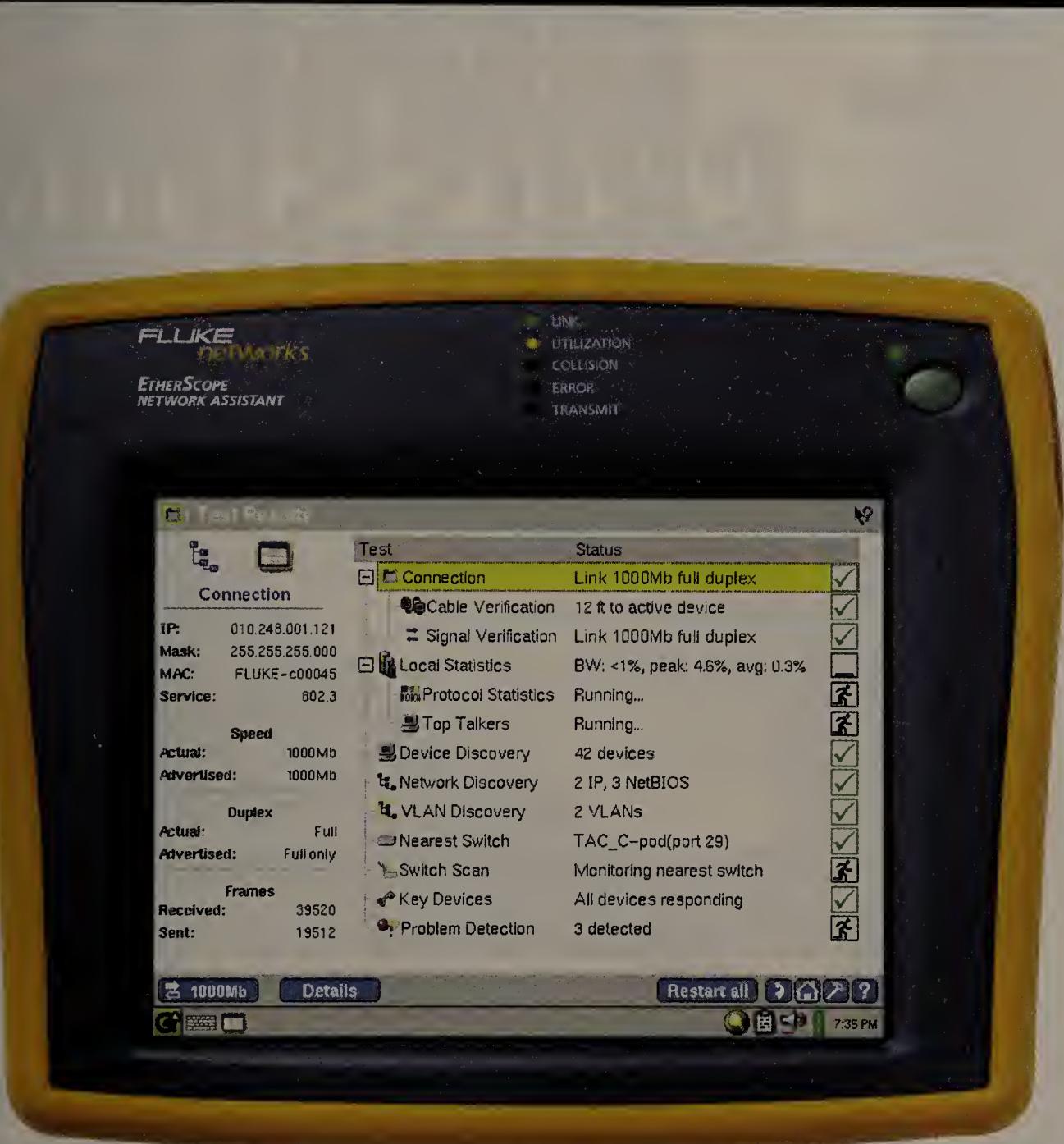
*Kobielski is a senior analyst with Burton Group, an IT advisory service that provides in-depth technology analysis for network planners. He can be reached at (703) 924-6224 or jkobielski@burtongroup.com.*

**No ESB product can provide a single-bullet solution to the dizzying range of integration requirements.**

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# E-MAIL AT A CROSSROADS

SPAM, PHISHING AND OTHER ABUSES ARE THREATENING TO UNDERMINE CONFIDENCE IN THE INTERNET. WHAT WILL IT TAKE TO SOLVE THE CRISIS BEFORE IT'S TOO LATE?

**"WE BELIEVE IT WILL TAKE** a combination of advanced technology, industry collaboration, consumer education, effective legislation and targeted enforcement against illegal spammers to significantly reduce and solve the spam and phishing problems."

— **GEORGE WEBB**, business manager for the anti-spam technology and strategy group at Microsoft



**"WE'VE SAID ALL ALONG** with CAN-SPAM that legislation isn't going to solve the problem all by itself. It's going to take a mix of both [legislation and technology] to adequately solve it."

— **MICHAEL GOODMAN**, staff attorney, Federal Trade Commission



**"WE WILL NEVER COMPLETELY ELIMINATE** [e-mail abuses], but technology can push the economic wall far enough so that it isn't profitable to do this anymore."

— **GREG OLSON**, founder and chairman, Send





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■ BY CARA GARRETSON

E-mail is arguably the most pervasive application on the Internet, but it's under attack by an onslaught of abuses that are eroding its usefulness. If not reined in soon, these threats could change the nature of the Internet as we know it.

Problems plaguing e-mail and the Internet in general have hit epidemic proportions. Few users have escaped the insidious nature of spam, and more are falling victim to phishing, a growing form of online identity theft. Viruses often carry malicious code able to turn an unsuspecting user's PC into a "zombie" that, when summoned, becomes a spam-blasting mail server.

These aren't problems that a new version of Microsoft Exchange or some additional disk space can fix. The Internet community is hard at work developing technology responses to these threats, while U.S. regulators seek to use the few legislative tools they've been given to crack down on e-mail crime. Unwanted e-mail has become such a global headache that international organizations are spearheading efforts toward multinational anti-spam laws and regulatory bodies.

"We see what is at stake is no less than the protection and preservation of the Internet as we know it," says Robert Shaw, Internet strategy and policy adviser with the International Telecommunications Union.

Yet all these interested parties agree that there is no practical cure to e-mail abuse, there's only containment.

### Communications crisis

Statistics tell the story of a problem that isn't about to go away. The ITU estimates that spam makes up about 80% of all e-mail sent across the Internet and costs the global economy \$25 billion annually. In July alone, 1,974 unique phishing attacks were reported, according to the Anti-Phishing Working Group (see graphic for more statistics, page 50).

Worse yet, no one knows what's lurking around the corner. Spammers have notoriously been able to stay one step ahead of technology and in their wake have created an entire industry of spam filtering vendors that scramble to keep up with the

latest tricks. Phishers create e-mails and Web sites that are practically identical to those they're spoofing, luring even savvy computer users into identity theft traps. The viruses that are turning computers into spam-sending zombies damage an innocent user's reputation and make it impossible to determine the real source of the e-mail.

In the world of e-mail, the abusers are calling the shots, and the technology industry is being led around by the nose.

"If you talk to people who use e-mail, certainly within the consumer ranks, they're saying it's too much trouble now, there's too much junk, and it's just too dangerous," says Greg Olson, founder and chairman of e-mail software maker Sendmail. "The whole thing is in jeopardy."

Yet few would go so far as to say e-mail will cease to be a popular communication mechanism. Not only have businesses invested too much time and money in building their messaging infrastructures and online customer relation strategies, but e-mail has become ingrained in Americans' work and lifestyles.

"We've built such a tremendous dependency on e-mail, I don't think we're in a position where we'll go back and say I'm going to start calling people or writing letters again," says Howard Schmidt, chief information security officer at eBay and former White House special adviser for cybersecurity. "As we look at the evolution of technology, we've overcome things and moved forward; this is just another thing to overcome."

Still, the days of sending and receiving messages without risk or nuisance appear to be gone.

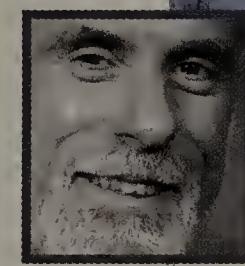
### Stopping spam

The only way to rid the world of spam is to make sending it not economically viable. The overhead associated with blasting spam across the Internet is so low that spammers require only the narrowest response rate to make money. If e-mail users ceased responding to myriad offers to refinance their mortgages or buy prescription drugs, spammers would stop sending them.

Short of making sending unsolicited commercial e-mail illegal — which Controlling the Assault of Non-Solicited Pornography and Marketing Act (CAN-SPAM) does, but only under specific circumstances — there appears to be no way to stop spam.

Clamping down on phishing, a more serious abuse that is considered a form of fraud and therefore a federal offense, means having to find the offenders and quantify the damages to their victims — something federal agencies have found challenging. Meanwhile, the Federal Trade Commission reports that identity theft continues to grow; the agency received 214,905 complaints in 2003, up from 86,212 in 2001.

With eradication of e-mail abuse an unobtainable goal, technology companies, industry associations, lawmakers and even international



**"TECHNOLOGY DOES HAVE A ROLE [in alleviating abuses], but it's not efficient to solve a problem solely with technology. . . . User education doesn't hurt, but it doesn't always work."**

— VINT CERF, senior vice president of technology strategy, MCI

bodies such as the U.N. have set their sights on making e-mail's problems less severe.

While opinions differ on the best way to cut down on abuse, everyone seems to agree it will take a combination of new technology, strong legislation with serious consequences, vigorous law enforcement, end-user education and international coordination to fight the problem.

### Technical tactics

On the technology front, the industry seems to be coalescing around the idea of adding sender authentication to e-mail, letting recipients verify the source of a message (see "Sender authentication hits roadblocks," page 50). By verifying a message's sender (or in the case of the most popular proposals, the domain from which a message was sent), such technology would close the loophole left open by SMTP that allows Internet mail to be anonymous.

The Internet wasn't originally designed with sender authentication in mind because no one predicted the need for such a safeguard. "When I took the [Internet] project over at DARPA in '76, the system didn't have a specific authenticator for every message. . . . We were assuming the [user] community was trustable. Now we know that's not true," says Vint Cerf, senior vice president of technology strategy at MCI, who is widely acknowledged as one of the inventors of the Internet.

Some purists say that adding authentication changes the essence of Internet, which has been lauded for allowing a free flow of communication that transcends economical, geographical and cultural barriers.

But most observers take a more pragmatic view — with so many people using the Internet and so much money to be made exploiting it, some form of accountability was bound to be necessary.

"It's inevitable that when you have this kind of wide deployment [of the Internet] you have to encounter issues like this," says Sanjay Pol [stet], vice president of the anti-spam initiative at Cisco. "It's a shame, but it's also inevitable."

## Legislative efforts

Until spammers can be identified, the only federal law passed to help fight spam remains largely useless. CAN-SPAM, which went into effect Jan. 1, has done little to stop unwanted messages, in part because it requires enforcers to be able to find violators. That is a tricky task on the Internet where senders easily can masquerade as someone they're not and where a large percentage of spam originates from overseas, outside the scope of the law.

"That's probably been the primary problem [in fighting spam], being able to find the people" sending it, says FTC staff attorney Michael Goodman. "For e-mail without authentication, it's too easy for spammers to violate the law without being detected."

Before creating a "Do Not E-mail" registry, much like the "Do Not Call" list that prevents telemarketers from dialing members' numbers, the FTC will wait for sender authentication to take hold, Goodman says. The agency is hosting a conference next week to examine the different sender authentication proposals and ensure "the whole spectrum of interests are represented, not just the big players," he says.

The goal of CAN-SPAM was not to cut down on the amount of unwanted messages hitting in-boxes, Goodman adds. Instead, its endorsement of the opt-out approach — preventing marketers from sending e-mail to recipients who have asked to cease receiving it — only makes sending spam illegal when marketers violate that agreement. "With opt out, you can say 'I don't want to hear from you,' but the law doesn't have a lot of tools to reduce the volume of spam," Goodman says. "That's where technology has the biggest role to play."

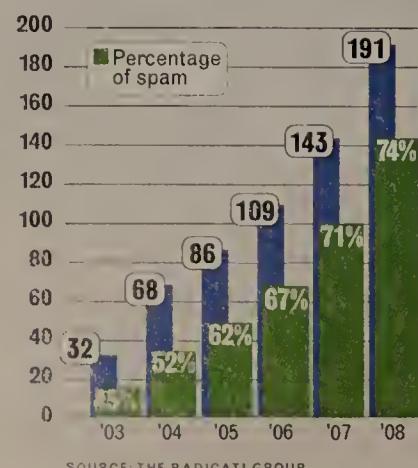
With phishing incidents on the rise, there has been some movement in Congress to address this form of online identity theft. In July, Sen. Patrick Leahy (D-Vt.) introduced the Anti-phishing Act of 2004, designed to make phishing a federal crime that could put offenders away for up to five years. Current law states phishing is a crime only after someone has been defrauded, while Leahy's bill would outlaw attempting to deceive e-mail users.

Of course, federal laws have no effect on spammers and phishers bombarding in-boxes from overseas. In the past few months, international bodies have highlighted the growing problem of international abuse, and a few proposals for action have emerged.

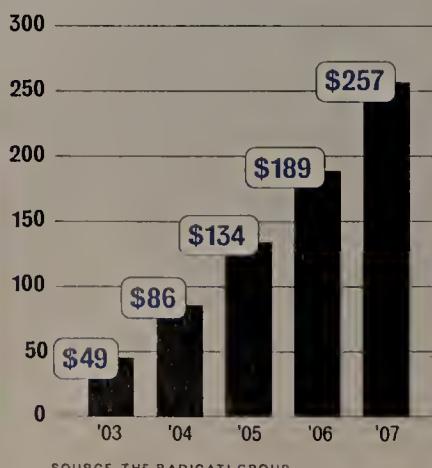
## Abuse by the numbers

Statistics tell the story about spam and phishing.

Total worldwide e-mail messages per day (in billions)



The cost of spam per corporate user in-box, per year, for a 10,000-employee organization (in dollars)



## International involvement

In July the ITU hosted a conference where Internet regulators from 60 countries met to discuss the need for regulation and technology to control e-mail abuse. The result was a call to all governments to pass anti-spam laws — currently only 30 countries have done so — and appoint regulators who specifically deal with unwanted e-mail. With more countries passing anti-spam laws, an international memorandum of understanding could be developed that might lead to cross-border law enforcement. The group realizes that, with a few exceptions, anti-spam laws have not been terribly effective, according to Shaw, and plans to share experiences from different countries to determine what works and what doesn't.

As is to be expected from any international organization, the effects of this initiative won't happen overnight. A report summarizing the working group on spam's recommendations won't be released until November 2005.

In August, the Organization for Economic Cooperation and Development (OECD) established a task force to monitor anti-spam initiatives by its 30 member governments and study related strategies. The study will be conducted over a two-year period before the group suggests best practices and public awareness campaigns.

And last month, the FTC announced its Action Plan on Spam Enforcement, signed with agencies from 15 countries.

The plan, which the FTC says builds on similar efforts by the ITU, the OECD and others, calls for the creation of an international working group on spam, as well as increased investigative training and establishing points of contacts for each country to respond quickly to enforcement inquiries.

While e-mail abuses no doubt will get worse before they get better, some people are heartened by the coordination within the industry and among lawmakers and international groups.

"The bottom line is that this is a global problem that affects consumers and business users worldwide, and it is going to take collaboration by everyone — leaders in the technology and other vital industries, governments and even users — to solve this issue," says George Webb, business manager for the anti-spam technology and strategy group at Microsoft. "The solution won't appear overnight, but collectively we are making great strides." ■

There are about  
578 million e-mail  
users in the world,  
and 762 million expected  
by the end of 2008.

SOURCE: THE RADICATI GROUP

Top 5  
spam-producing  
countries

- 1 U.S.
- 2 South Korea
- 3 China
- 4 Brazil
- 5 Canada and Japan (tie)

SOURCE: SOPHOS, AUGUST 2004

## Sender authentication hits roadblocks

Sender authentication won't completely rid e-mail in-boxes of spam and phishing. Yet technology has emerged as a useful tool in fighting e-mail abuses by giving recipients some clue as to who is sending them messages.

Many sender authentication proposals are being developed, including DomainKeys, an authentication technology that uses cryptography from Yahoo, and Identified Internet Mail from Cisco that uses attached signatures. The most popular proposal is Microsoft's Sender ID, a combination of the company's original Caller ID technology and Sender Framework Policy, developed by Meng Weng Wong of Pobox.com. In June, Sender ID was submitted to the IETF for consideration as a standard by the organization's MTA Authorization Records in DNS (MARID) working group.

But with the IETF's response in September that Microsoft rework its proposal to address concerns over the technology's licensing structure, and the subsequent dismantling of the MARID group because of technology disagreements among members regarding SenderID, implementation might be severely delayed. Last week Microsoft submitted a revised version of Sender ID to the IETF with hopes that the changes it made will satisfy critics.

Sender ID requires organizations to publish a list of their e-mail servers that recipients can use to validate the domain from which a message originates.

Supporters say sender authentication will help fight phishing because senders will no longer be able to make their e-mails look like they've been sent by a valid company. These proposals won't directly curtail spam because plenty of spammers don't hide their identity to begin with, but some say they will enable a new approach to filtering unwanted messages.

"Sender authentication doesn't cure spam, but it gives us some important new clues in controlling our mail. Once you know mail is legitimate . . . it makes sense to shift the strategy away from the current mail filters that [weed] out the bad stuff and switch to where we filter in the good stuff," says Greg Olson, founder and chairman of e-mail software maker Sendmail.

But others question the effectiveness of authenticating a sender's identity. "Very little of the spam I receive has an identity that is useful in making its way in," says Steven Bellovin, AT&T Fellow and security area director for the IETF. As for phishing, sender authentication might prevent spoofed e-mail, but that alone won't put an end to the scams. "Sure, [sender authentication] might prevent [spoofing] e-mail from citibank.com, but it won't prevent clever phishers from creating ecitibank.com or cit1bank.com, or a thousand other variations," Bellovin adds.

— Cara Garretson

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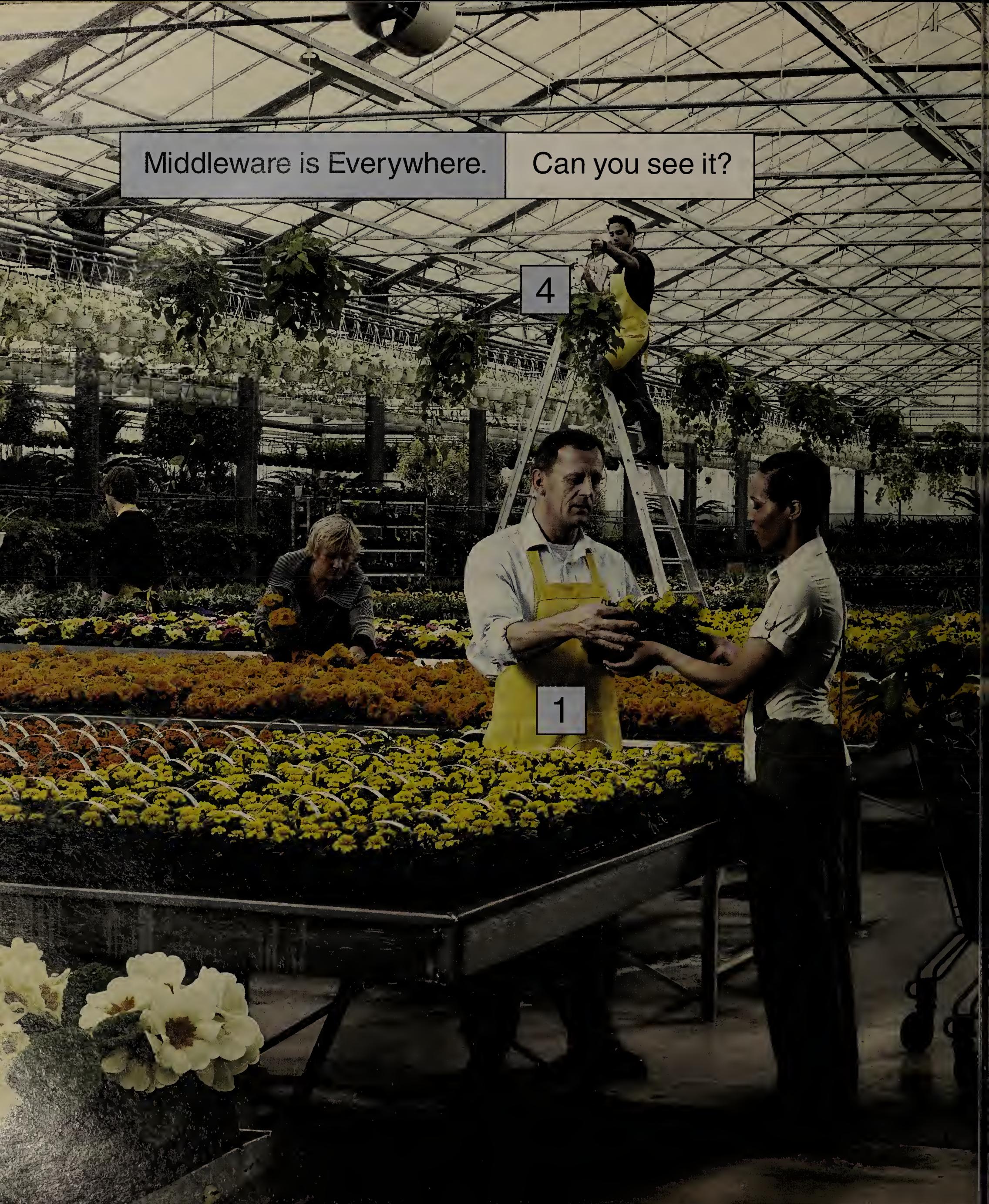
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# Security

## Summit

CIOs gather at Dartmouth College to share ideas on enterprise security.

■ BY JOEL SHORE

Can security be a competitive advantage? Are security and privacy at odds with speed and collaboration? How has Sarbanes-Oxley complicated the security challenge? And how do you balance risk and security?

Those are just some of the pressing questions 23 prominent IT executives and academics addressed at a recent daylong executive roundtable at Dartmouth College in Hanover, N.H.

The Thought Leadership Summit on Digital Strategies is an ongoing series of discussions for Fortune 500 CIOs and vice presidents focused on the business issues they face and the enabling role of IT. The summit was co-founded by the Center for Digital Strategies at Dartmouth's Tuck School of Business and Cisco. *Network World* President and Editorial Director John Gallant moderated the event.

Participants represented some of the largest and most well-known companies in the U.S., including Fidelity, Staples, Citigroup, Owens-Corning, IBM, General Motors, Hasbro and Cisco. On the academic side, Harvard Business School, Bentley College, Dartmouth College and the Tuck School were represented.

The executives shared with peers their security fears, goals, frustrations and challenges. The many challenges include protecting the network against internal and external attacks, educating and training employees on security, obtaining adequate funding from the CEO and board

of directors, complying with new federal regulations, and making sure they don't impede the company's business units.

"I never want to be in a position that the business wants to do something and I'm constraining it," said Max Ward, vice president of technology at Staples.

There was widespread agreement on that point, but several participants noted that sometimes they can't avoid it. IT staffers are often so busy putting out fires, fighting viruses and applying patches that they don't have time to think about ways to make the business function better.

The issue becomes even more complex when you're talking about the extended enterprise. "As we extend the enterprise out to the suppliers, having to deal with security and validating that this guy is trusted ... it's slowing that process down, but we have to do it. There's no way around it," said Doug Schwinn of Hasbro.

John Moore of IBM concurred. "You really want to be able to tie two networks together to have that free flow

**See Security, page 56**



**Ken Rathgeber of Fidelity Management and Research, makes a point about enterprise security, while John Cianci, center, vice-president of global IT infrastructure at IBM, and Robert Austin, right, assistant professor at the Harvard Business School, listen intently during a summit on digital strategies at Dartmouth College.**

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## Security

continued from page 54

of information, but if Company A doesn't have the same security standards that your company has, you're really opening up your door to everything that wants to come in."

The emphasis on security also can slow innovation, Fidelity's Jim MacDonald said. Fidelity likes to work with small, innovative tech companies that can "help us get a competitive advantage." But, if the company's security standards are not up to snuff, "we've gone slower creating partnerships with those types of companies."

M. Eric Johnson, director of Tuck's Center for Digital Strategies, said information security today has similar qualities to how it was 20 years ago: bolted on not built-in, viewed as an inhibitor of operations and residing in a "special" department. "It must move to being designed in at the start, being an enhancer of operations and internalized throughout the company," he said.

### The security advantage

On the question of whether stellar security can be a competitive advantage, most took the position that security is a prerequisite for doing business, but not necessarily something a company trumpets in the marketplace.

"Failure in security, that's what gets noticed. If you're successful, it's expected," said Jack Matejka of Eaton.

Hasbro's Ed Kriete took a similar tack. "If you screw it up, there's going to be real consequences, but at this point, it's really a qualifier."

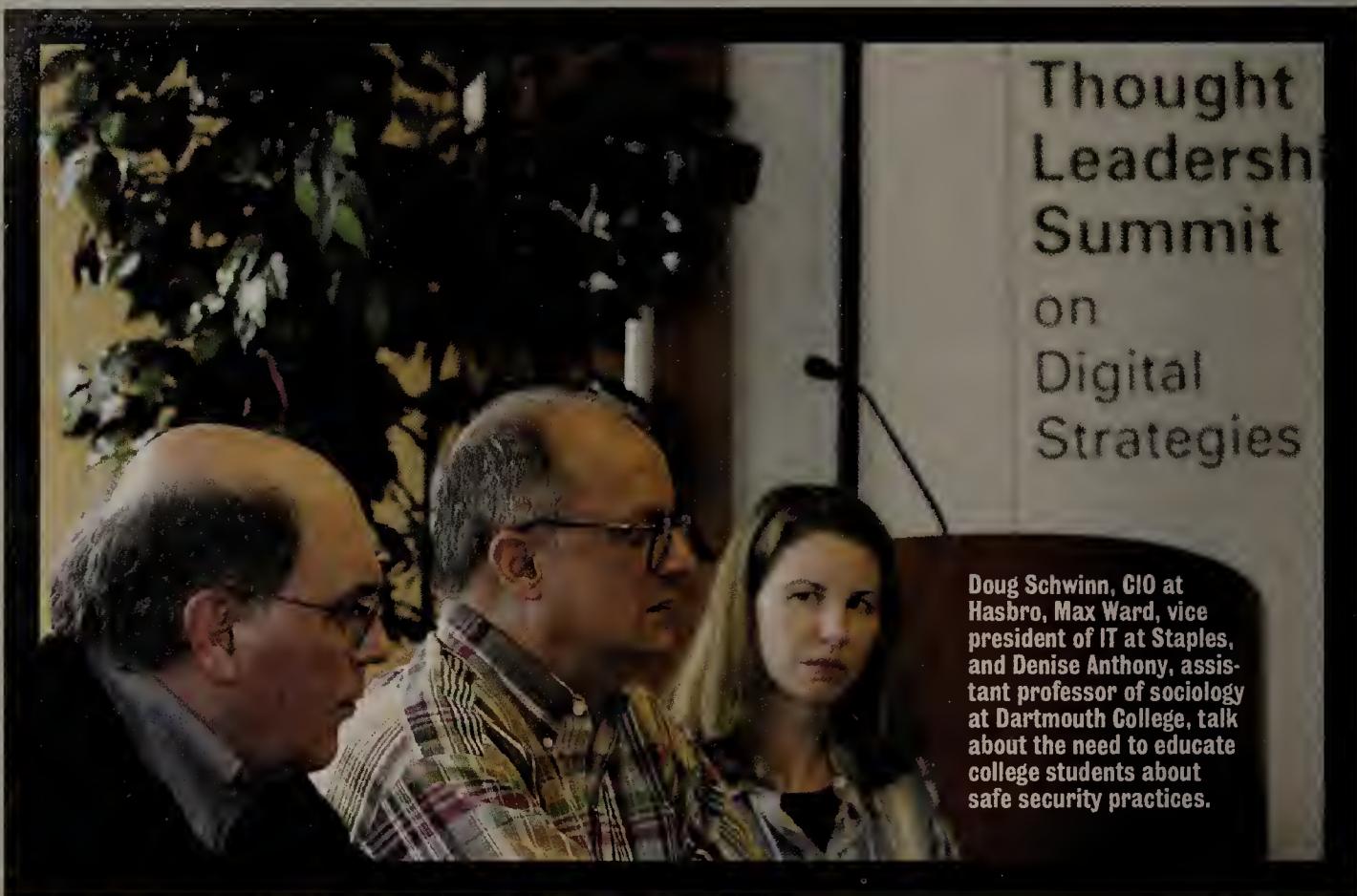
Staples' Ward disagreed, saying one of the reasons the office supply store is taking market share from its competitors is that it has convinced customers that "the system is going to be there when I need it."

### Threat matrix

Unfortunately, in today's world, every company is a target and two problems weighing heavily on IT executives are trying to identify where the threats are coming from and trying to assess and analyze risk.

For these IT folks, the fear factor is real. "What I worry about is emerging threats that I don't know about," Fidelity's MacDonald said.

Don Kosanka of Owens Corning has dealt with unsecure applications that were written when factories were



isolated from the rest of the world and not connected to the supply chain.

For John Cianci of IBM, a big issue is protecting servers in IBM's labs.

Cisco's Brad Boston faced a similar situation: "We had to isolate all the labs. They were my biggest source of denial-of-service attacks."

Other concerns are employees who connect from home over broadband or who use wireless connections, and employees who mix personal and corporate data on their personally owned BlackBerrys and PDAs.

When it comes to analyzing risk, Fidelity has a solid approach. MacDonald uses a cyberthreat matrix, with the likelihood of a security event on one axis and the potential effect on the other. "The top right quadrant is our best analysis of what requires immediate attention and what senior executives should focus on," he said.

Owens Corning uses a similar process to assess risk for its manufacturing plants, Kosanka said. "When you

look at a manufacturing facility, you try to understand the probability of a failure and the impact of that failure. Looking at those two factors, you make decisions about how much you're willing to invest," he said.

### Regulatory concerns

Federal regulations, particularly the Sarbanes-Oxley Act, are a major headache, according to the IT leaders. They said they were especially bothered by the lack of predictability and uniformity in terms of what is required to meet the regulations and in how those regulations are interpreted by auditors.

Hasbro's Schwinn described the process as onerous and complained that it's difficult to get a clear understanding of what the law requires. "The goal line keeps changing," he said.

Staples' Ward put it this way: "It's like nailing Jell-O to the wall. The nature of that legislation is that it lends itself to people panicking and probably doing too much and still not knowing if they are going to be compliant. And it's probably going to change over time. Whatever you get audited this year, it's going to be different next year."

"We use different" auditors, Cisco's Boston said. "One to tell us how to do it, and the other to test it to do it right."

Schwinn added, "Every auditor looks at it differently too. I actually had one level of review the other day. We were reviewing disaster-recovery components, and we had our plan. We had documented that we did the test but then the auditor says, 'Prove to me that the document is authentic.' How do we do that?"

Boston argued that while recent financial scandals spurred these regulations, "none of these controls will prevent Enron or the next WorldCom because it has nothing to do with what happened."

International regulations with regard to security and privacy add another level of complexity. IBM's Cianci said Italian privacy laws require customers to opt in before a company can send them e-mail. "If you don't know about it, your chief officer in Italy is going to jail," he said.

European Union privacy and security laws have slowed Hasbro's business initiatives, said Michael Elliott, because each country interprets the regulations differently.

For other issues, such as ways to decrease complexity,



Scott Day, global information protection manager at Cargill, left, and M. Eric Johnson, director of the Center for Digital Strategies at Dartmouth's Tuck School of Business, discuss security issues during the conference.

there are no easy answers. Some panel members said they would like to reduce the number of vendors they deal with, but worry about creating a single point of failure or becoming too dependent on one vendor.

Many spoke about the desire to move off the Microsoft monoculture and spread their risk among multiple platforms, but there was agreement that such a strategy at this point was untried and risky.

### The metric system

Similarly, the IT executives said they struggle with finding metrics to determine whether they are spending too much or too little on security.

Scott Day, global information protection manager at Cargill, said that determining how much you're spending is difficult. "Do you count directory services in your security budget? Do you do ID access in your security budget? In my opinion, there is a wide range of debate. You take all that and blend it together, you get a target for what you think you as a corporation need. You go to your sponsors and stakeholders and say, 'Here's why we're reaching that level and here's what we're doing from a financial standpoint.' Either they're happy with it or they're not," he said.

There are limits to how much you can ask for, Staples' Ward said. "We know we need to do things, [but] I am not going to tell our CFO that we need to do something that's going to break the bank."

### Education is key

Keeping employees informed and up to date on new threats is as essential as requiring compliance with corporate best-practices policies. With some corporations now requiring that employees sign a document to acknowledge receipt of corporate security guidelines, accountability for unawareness or careless behavior is growing in popularity.

At Owens Corning, "We put out a lot of communications about recent virus attacks and what's going on. We talk about what we've done inside our company, and then we'll have a few things that we recommend them to do at home," Kosanka said.

IBM's Cianci offered this example: "We have a home page that we run through the corporation. We highlight security, and we do a direct link to our security portal. Any type of virus or worm or anything, you know the first thing to do is hit here. It will tell you exactly what's going on. From an education point of view ... we have a corporate instruction that goes out to every employee, and it's line management's responsibility to ensure guidance. Then there are audit trails to see that gets implemented worldwide."

Hasbro has a similar approach, Schwinn said. "Every employee annually signs a set of security guidelines. [What] we're seeing now is mass e-mail about a problem ... with instructions. We don't want to wait for them to go to the Internet. We want them to know about it."

At the end of the day, the executives agreed that corporations' security needs

will continue to grow but must be implemented in a manner that does not impede core business activities.

Each participant came away with specific areas on which they planned to focus. "I guess the thing I'm left with is thinking about how we could improve the communication that we make as an IT group to

our user base," Hasbro's Elliott said.

Added Staples' Ward, "A key take away with me is the whole issue of we really have a major new responsibility I think in terms of educating the business about risk."

And Peter Johnson, CIO of Dartmouth-Hitchcock Medical Center, summed up the day's activities this way: "I was comforted

that we all had the same problems. It's a little bit of personal therapy."

*Shore, a technology journalist in Southborough, Mass., provides product-strategy consultation and editorial-development services to technology companies. He can be reached at [www.joelshore.com](http://www.joelshore.com).*



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CLEAR CHOICE



TEST

Policy management

# Configuresoft succeeds at system compliance management

■ BY MANDY ANDRESS, NETWORK WORLD LAB ALLIANCE

D

efining, monitoring and enforcing Windows system configuration has become the collective oil that helps keep installation, maintenance and support processes running smoothly. Not to mention what it does to ease your Sarbanes-Oxley compliance headache.

With its intuitive interface, great flexibility and automatic compliance functionality, Configuresoft's Enterprise Configuration Manager (ECM) Version 4.5.2 is one of the best Windows-centric programs we've tested. It earns our Clear Choice designation.

While its roots are in traditional desktop configuration, ECM now hones in on policy management and compliance by collecting and correlating information from servers and workstations and taking action when they are out of compliance with the defined policy.

ECM uses an agent-based collection mechanism. The agents are pushed out to the Windows machines via a process the management console facilitates.

The three-tier ECM server architecture consists of the collector, a database and console. The collector manages gathering and analyzing data the systems collect.

The console is a four-module, Web-based management program that provides access to all of ECM's features. The console module provides access to the

raw data the managed systems collect. The compliance module shows the rules and reports supported for setting policy. The reports module provides templates to view system information, driven by a Crystal Reports engine. The administration module provides all the ECM configuration settings, such as agent installation and user management.

The ECM engine installation had minimal issues.

Installing the agent software out to the managed systems is a simple process that takes only a few mouse clicks. Once the agents are installed and data collected, ECM is ready for use. By default, ECM uses Distributed Component Object Model for agent communications. HTTP communication is a second option. We would like to see Configuresoft upgrade these communications to support more secure protocols such as Secure-HTTP (HTTPS).

Using the console module, administrators can directly change configuration settings for individuals or groups. A few of the settings ECM manages include Windows users and groups, Windows NT File System audit settings, NTFS directory permissions, installed Microsoft hot fixes and registry key permissions.

One of the best features of ECM is its auto compliance functionality. Administrators can set a baseline configuration that all systems must follow. If a system comes online out of compliance or if someone makes a manual change while it's online, ECM enforces the required settings, which leaves a full audit trail. ECM is detailed in its ability to look at registry key permissions, file permissions, password settings and patch levels, and then take corrective action if the administrator has set it to do that.

While ECM offers an automatic compliance feature that makes configuration changes, if you want to tie in patch deployment, you need to use Configuresoft's Security Update Manager add-on.

We set required policy settings on our Windows 2000 Server, including password policy and NTFS directory permissions. We changed the settings on the

## How We Did It

We installed ECM 4.5.2 on a Windows 2003 Server (2GHz, 2G bytes RAM) running IIS and SQL Server 2000, all fully patched. We installed ECM agents on five Windows systems, running default installations of Win 2000 Server, Win 2000 Professional, Windows XP Professional and Win 2003 server. We installed the ECM agent on a Win 2000 Server.

We modified audit settings, password policy and directory settings on the Win 2000 Server. We set them as a mandatory compliance policy and set e-mail alerts on systems not in compliance with our defined policy. We then changed the settings directly on the computer and confirmed ECM alerted us to the non-compliant system and changed the setting to its correct value. For the remaining systems, we enforced the SANS Security Windows template on the default installations.

We installed Office on the Win 2000 Professional system and ran the "Software Installation over Last X days" report to confirm it collected data from the system on new software installations. We also ran the change log report to confirm the changes made to the Win 2003 Server system, which included all the configuration changes required to enforce the SANS template.

server to be out of compliance and ECM changed the settings back to the compliance configuration immediately after its next scheduled check. We also received an e-mail alert we set up to receive if a system was out of compliance. We also could have configured ECM to send an SNMP trap or write to the event log.

ECM's components, including policy templates and individual rule settings, are flexible and customizable. Out-of-the box, ECM includes pre-defined best practices for operating systems and key infrastructure applications such as SQL Server, Exchange and IIS. It also includes a compliance template for the SANS Securing Windows Guide. Every rule and template can be modified. We applied the SANS template to our default Windows installations to configure the systems.

ECM's polish lies in its Web console. The layout, color scheme, icons and workflow work together to make the user experience an excellent one. With the level of detail available in ECM, you might think that the console could get overloaded quickly, but the user interface designers have done an excellent job preventing the user from feeling overwhelmed by information. We'd like Configuresoft to bump up the security a notch by having

the Web console use HTTPS communications by default between it and the administrator's machine.

ECM's reporting is flexible, customizable and detailed. Reports can be generated that show which systems are not in compliance with a single setting, a pre-defined template or custom policy. Reports can be generated on what actions have been taken to enforce policy settings.

For managing Windows systems configuration and automating policy enforcement, we haven't found a better product. The ease-of-use and flexibility of ECM provides the means to deploy a secure, self-sustaining Windows infrastructure.

*Andress is president of ArcSec Technologies, a security company focusing on product reviews and analysis. She can be reached at [mandy@arcsec.com](mailto:mandy@arcsec.com).*

## NW Lab Alliance

Andress also is a member of the Network World Lab Alliance, a cooperative of the premier testers in the network industry. For more information, including what it takes to become a partner, go to [www.nwfusion.com/alliance](http://www.nwfusion.com/alliance).

## Net Results

### Enterprise Configuration Manager

OVERALL RATING  
4.55

**Company:** Configuresoft, [www.configuresoft.com](http://www.configuresoft.com)  
**Cost:** \$995 per server, \$30 per workstation and a 20% maintenance fee. **Pros:** Well designed, intuitive Web console; flexible rule and policy creation. **Cons:** Insecure communications protocol; Windows-centric.

**NetworkWorld**  
CLEAR CHOICE

### The breakdown

Policy definition	30%	4.5
Compliance enforcement	30%	4.5
User interface	25%	5
Reporting	15%	4
<b>TOTAL SCORE</b>		<b>4.55</b>

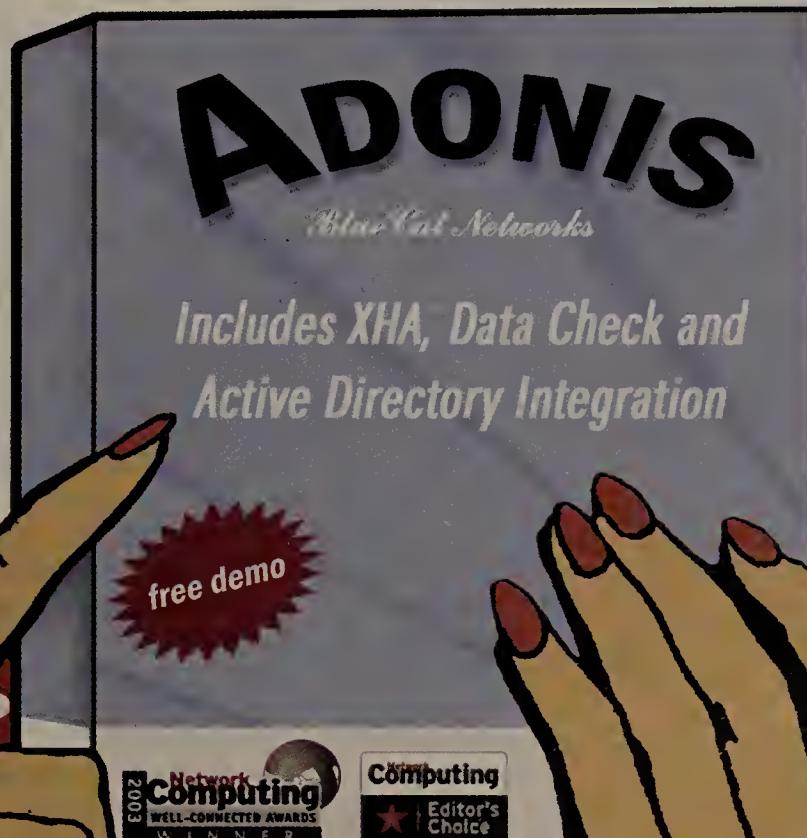
**Spring Key:** 5: Exceptional; 4: Very good; 3: Average; 2: Below average; 1: Consistently bad

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## Management

## Strategies

■ CAREER DEVELOPMENT  
■ PROJECT MANAGEMENT  
■ BUSINESS JUSTIFICATION

# Improving IT infrastructure

High-performance businesses need a strong foundation.

■ BY JAMES HALL

In too many companies, IT is suffering from what Accenture refers to as the austerity trap. It's a trap that is triggered when companies, responding to short-term pressure for greater earnings — and suspicious at best about what might be seen as inward facing IT investments — focus only on cost-cutting and on replacement.

High-performance organizations avoid the austerity trap. Our research shows that high-performance organizations look beyond cost alone to the total impact of a technology project — to its ability to help build a superior cost position and faster response times and, as a result, greater market share.

A key criteria for high-performance is a solid IT infrastructure. It's always tough to get business executives excited or even interested in discussions about technology infrastructure. However, they might make this a greater priority if they understood the extent to which corporate agility can be hampered.

But more surprising is the extent to which many CIOs focus all their attention on application issues and push infrastructure down the priority list. This is not just ill advised; it is dangerous, verging on negligent.

Rigorous demands will be placed on IT infrastructure in the coming years. The systems and networks of a high-performance business or government must be able to do the following:

- Handle enormous volumes of data from inside and outside the firewall.
- Support new classes of applications — radio frequency identification or embedded systems, for example.
- Deal equally with multiple types of structured and unstructured information.
- Respond to new requirements for identity management and data security.
- Accommodate quick and extensive changes in the requirements placed on it as the pace of doing business accelerates.
- Support collaboration by global teams and an increasingly mobile workforce.

Beyond the new challenges, companies need to realize that their infrastructures to some extent have been neglected and now just aren't up to the task of supporting

high-performance business capabilities.

That's the situation that many companies and governments have to deal with today. Overcoming that obstacle requires mastery of a discrete set of infrastructure skills in such areas as networking, data center operations and security. As IT departments graduate from basic to progressive and then to pioneering skills, they contribute greatly to the overall performance of their organizations.

## Adaptation and innovation

Of course, much good work is being done already. Many organizations have recognized the need to view infrastructure as a strategic issue and are beginning to see the benefits.

For example, about two years ago, Accenture worked with a global mobile systems supplier on a global IT consolidation project as part of an overall infrastructure transformation. Over a 12-month period, this large-scale transformation effort generated nearly \$200 million in cost savings and reduced annual IT costs by 40%.

Or consider that in 2000, faced with fierce competition and declining operating profits, Accenture worked with one of Europe's largest grocers on a multi-year, radical business transformation program to improve its stores and customer service, its supply chain and, above all, its IT infrastructure. As a result of this program, the grocer improved IT service levels dramatically, and reduced associated operating costs through standardization and consolidation across a range of hardware, database, communications and applications systems, nearly halving its annual IT operating costs.

But it is not just about cost savings. This year, Accenture is embarking on an infrastructure-related project with the U.S. government. The rationale for this project is not cost reduction but enhanced capability: an identity-detection system to capture the entry and exit data of visitors through the use of digital-finger scans and digital photos at U.S. ports of entry.

## Start with a plan

So what practical steps can be taken to improve the strategic value of your infrastructure? Accenture recommends a three-phase process for infrastructure transformation.

First, effective consolidation and standardization is a good start. It is both a prerequisite to further progress and

## Top technology priorities for 2004

CIOs recognize the importance of infrastructure investments in enabling innovation and delivering business value. Here's how those issues were ranked in a Gartner survey.

1. Developing an efficient and flexible infrastructure.
2. Managing an efficient and flexible infrastructure.
3. Security enhancement tools.
4. IT performance management (efficiency).
5. Improving the total cost of ownership.
6. Applications integration/middleware/messaging.
7. Maintaining a standard desktop across the enterprise.
8. Building IT-enabled inter-business processes.
9. Network infrastructure/management tools.
10. Storage management and employment.
11. Enterprise portal deployment.
12. Business intelligence applications.

is relatively simple to accomplish — major savings that can be achieved quickly or easily. Many companies are well on their way by standardizing technologies onto fewer platforms and eliminating outdated applications.

In the second phase, companies move toward infrastructure virtualization and utility-style IT delivery, essentially establishing a dynamic and scalable utility computing infrastructure within the firewalls of their company.

Finally, in Phase 3, companies extend this virtualization, and the dynamic provisioning it enables, beyond organizational walls to third-party IT resource providers. The business case is there to justify this approach to infrastructure transformation, and it can be done by reinvesting savings achieved from a more efficient infrastructure, in some cases without an increase in your spending.

By laying a strong infrastructure foundation, organizations can use IT to deliver innovation and achieve high performance.

*Hall is global managing partner, Technology & Systems Integration at Accenture, a global management, consulting and technology services and outsourcing company. He can be reached at [james.hall@accenture.com](mailto:james.hall@accenture.com).*

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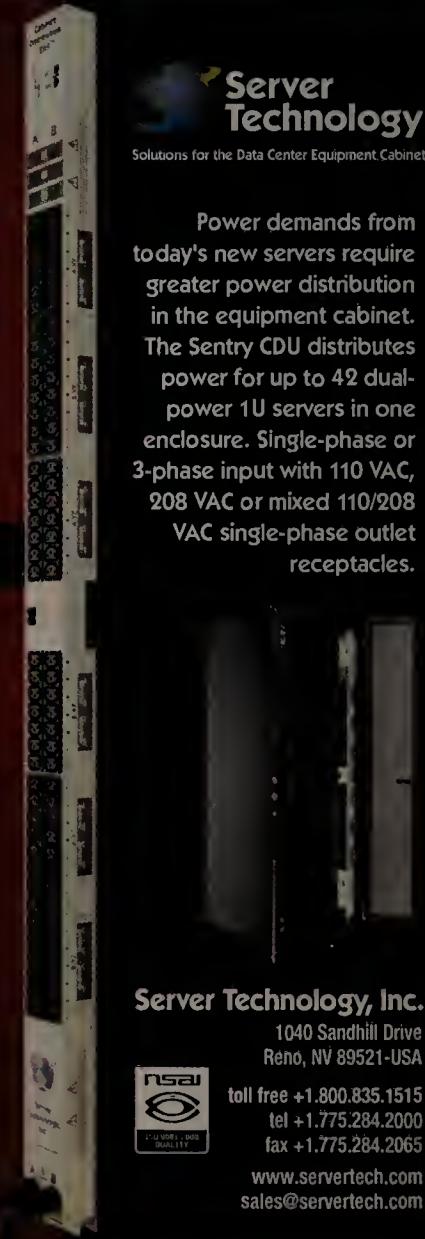
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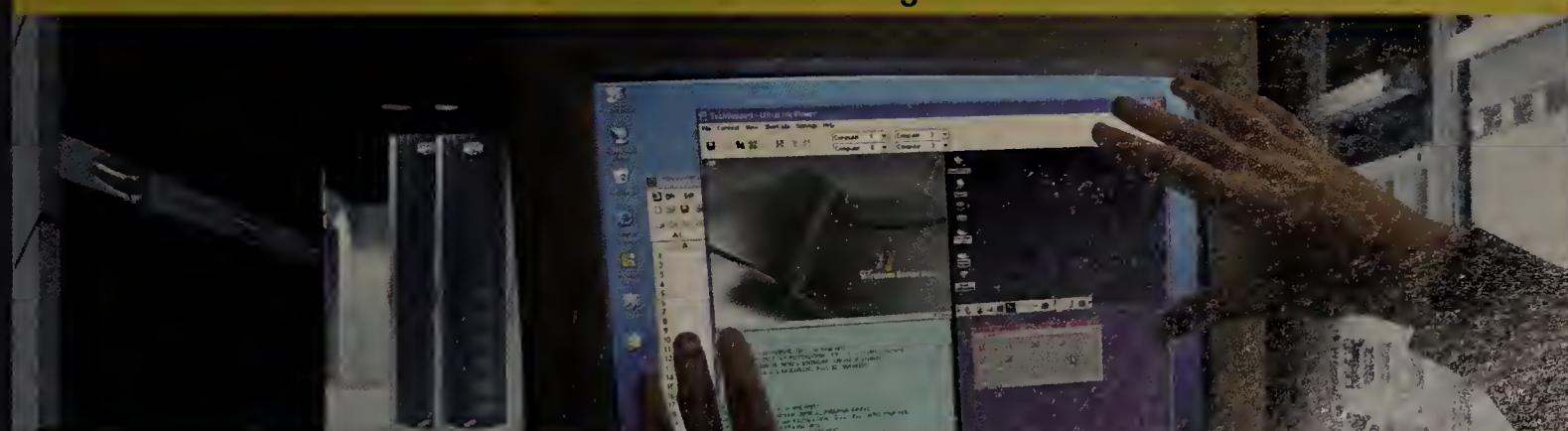


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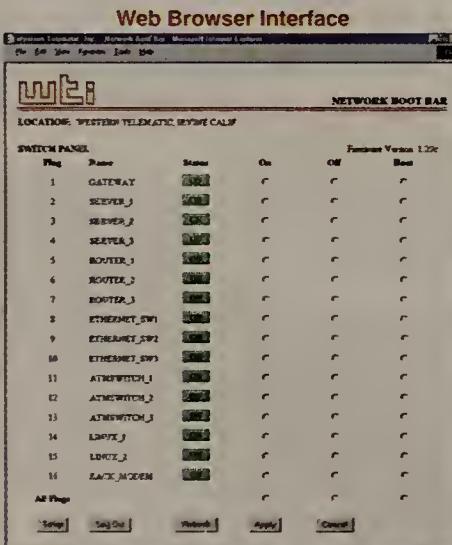
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## IT Careers: Does this Employer Value Diversity?

Companies covet a reputation for valuing diversity. They advertise, they talk, they count. But for those IT professionals defined as "diverse", how do you know for sure?

It's a question that Annette Merritt Cummings and Martha Ceja spend their careers evaluating. Cummings is vice president/national director of Diversity Services for Bernard Hodes Group. Ceja is a strategist with the group, based in Silicon Valley.

The Diversity Services organization looks at valuing diversity as a process of moving from an initial point through four phases that end with inclusion. Cummings defines inclusion as acceptance of the ideas and talents that all people bring to an organization, a long journey from initial training that helps an organization understand why diversity matters from a business stance.

Cummings says there are specific queues as to the progress along that continuum. "The first place you'd go in looking at a company is probably to its website. Do they have affinity groups? Is the site in more than one language, such as Chinese, Spanish or other? How many clicks does it take you to get to some mention of diversity? If it takes six or seven before there's any mention, that tells you this is not one of the company's higher priorities or that the human resources or diversity organizations has lost the battle for (website) real estate."

Ceja says appearances do count, on the website and in real life. "Are there individuals (of diverse backgrounds) in positions of leadership?" she asks. "Seeing this (for any person of diversity) is invigorating in terms of the possibilities it represents. I advise people to drill up further – look at the executive committee and at the board of directors. Look for transparency in terms of how open the organization is about its progress in valuing diversity. Is it something they report on annually?"

In addition, the two diversity leaders have advice for IT professionals looking at a career change. "If I were looking at new opportunities, I would look first at an industry that fascinates me, beyond the IT application, because that's where the jobs are – not in pure IT companies," says Cummings. The industries closest to the consumer, such as automotive and consumer products, are marketers by definition and understand the changes in the marketplace in this country. They have embraced diversity at a more aggressive rate."

Cummings also points to government agencies as major players in the future of the IT profession. Agencies ranging from the CIA to the Office of Personnel Management are hungry for IT skills; up to 70% of the senior managers in federal government are expected to retire in the next five years. "These aren't just entry level jobs – these are careers."

Ceja says for IT professionals there is a distinct advantage – skills mean everything. "In Silicon Valley, if you have the skills, this becomes a color-blind profession in some ways, "these are careers," she says.

### The Four Stages of Diversity

#### 1. Affirmative Action

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#### 2. Valuing Diversity

Celebrating diversity and providing diversity training. Marking Black History month, Women's History month, etc. Appreciating the fact that diversity can add value to your organization and help you achieve your goals.

#### 3. Managing Diversity

This is where you change your culture. This is the hard work. This is changing attitudes so that everyone is embracing the value of diversity. Everyone understands the business case. At this stage, you start holding people accountable. You may include diversity as a measure in performance reviews.

#### 4. Inclusive

At this stage, the organization has diverse teams in place as well as formal measurements. Managers are held accountable for their success in fostering diversity, and are rewarded with bonuses or provided with negative consequences.

Source: Bernard Hodes Diversity Services

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**SOA**

continued from page 1

coupled into composite applications across a distributed network.

"I call it spaghetti-oriented architecture," Kobielsus says. "It's this mess of messages. SOA relies on messaging-oriented interaction among endpoints. How can you manage all this, how can you design it all, optimize it all, track it all, secure it all, this mess of messages, this spaghetti?"

While those are worthwhile

## A CLOSER LOOK: Service-oriented architecture

First of two parts

questions, they also provide counterbalance to the notion that corporate adoption of the SOA is a forgone conclusion.

While major vendors such as BEA Systems, IBM, Microsoft, Oracle, SAP and Sun are retooling their product portfolios for Web services and SOA, users are still catching up.

Despite obvious interest — 76% of CIOs said they will make an SOA investment — a recent study by The Yankee Group shows that 44% of 473 respondents said their lack of understanding of Web services and loosely coupled architectures were two inhibitors in adopting an SOA. Another 44% said they were unconvinced of the business benefits, while IT executives said the biggest challenge to interoperability and standards adoption is the cost of software and services.

Many of those same IT executives lived through the unfulfilled promises of the Common Object

Request Broker Architecture and the Distributed Common Object Model, two failed attempts at service orientation.

**What it takes**

The challenges appear on many fronts and include the need for standards beyond the generally accepted foundation specifications including XML, the Simple Object Access Protocol (SOAP), Web Services Description Language (WSDL) and maturing security protocols such as WS-Security. The missing standards include

those for reliable messaging, management and business process orchestration to support transactional quality applications running within an SOA.

Also needed are new twists on middleware to battle latency and ensure service-level guarantees. This is especially true in the face of a glut of messages from XML and Web services that will swamp the network and require specialized acceleration hardware, policy enforcement points, protocol translation engines, application layer routing, improved caching techniques and traffic management.

"We're not talking about packets anymore; we're talking about messages passing through the network that are making things happen. It's a big shift," says Eugene Kuznetsov, founder and CTO of DataPower, which develops hardware for improving the performance and security of XML traffic. He says the shift will affect software and infrastructure.

Users will need to overcome the age-old roadblock of corporate politics because building a reliable and stable architecture means the right hand needs to know what the left hand is doing.

"The issue is that architecture is a best practice," says Ron Schmelzer, an analyst with ZapThink. "The tool set will get you only part of the way. Architecture is a discipline; you don't get it from a tool. You need to know what services to build, how to build them at the right level of granularity and how to build them loosely coupled."

Loosely coupled is a defining feature of an SOA that basically describes components that are not hard-wired but can be stitched together on the fly into "applications" or business processes.

**The standards play**

While standards are progressing, many needed specifications are still being hashed out.

"There is still some shakin' going on," Schmelzer says about the development of key specifications such as business process, management and reliability. But he notes that the core Web services specifications such as XML, SOAP and WSDL are "pretty mature."

Beyond those, however, are an alphabet soup of emerging protocols that promise to help facilitate, orchestrate and secure interaction across an SOA. This includes XPath and XQuery for data management; WS-Discovery for finding services; WS-Distributed Management; WS-Addressing for messaging; WS-Business Process Execution Language for process workflow; a litany of reliability specifications including WS-Reliability, WS-ReliableMessaging, WS-Notifications, WS-Eventing and WS-ResourceFramework; and transaction specifications including WS-Coordination, WS-Atomic-Transaction and WS-Business-Activity.

"Companies should be aware of where the specs are at, but by and large, individual companies don't implement the spec directly anyway. They look for products," Schmelzer says. "So companies need to put pressure on the vendors to collaborate and get these specs out."

In general, the standards will bring another level of flexibility to SOA, and let companies mix and match and easily swap out components that stand behind Web services interfaces or that

**Best advice**

**SOAs require proper design. If not, they're likely to fail and end up incurring high costs.**

**Low-hanging fruit:** Services wrappers — via Java, C++ and other techniques — may get users into the SOA world quicker, but typically make poor services.

**Architect beware:** Objects and components are not services. If not properly designed, objects and components can generate too much traffic and overwhelm the network. Services need to be designed in their own right.

**Proliferation:** Too many small SOA services will clog the network and render SOA unusable.

**Bigger not better:** Services that are too large will inherit problems of monolithic architectures and not be as effective.

**Extremism:** Not all software should be service-oriented.

SOURCE: GARTNER GROUP

aid in service orientation throughout the network.

**Traffic management**

While companies will be able to put existing middleware to use, such as message-oriented middleware and transaction, Web, application and integration servers, middleware for an SOA is being defined by a concept called the enterprise service bus from vendors such as Sonic and IBM.

"What needs to be built on top of existing middleware capabilities is what we call the distributed services architecture," says Gordon Van Huizen, CTO of Sonic. "The unique aspect is that all capabilities across the system are available as addressable event-driven services. The applications are not bound to the middleware; they are consuming and responding to events."

Traffic management architectures will have to be reconfigured to accommodate special firmware and hardware to handle the volume and processing chores of XML messages, experts say.

Traditional Layer 2 and Layer 3 devices can't parse XML messages and need to be complemented with specialized tools including Layer 7 load balancing, transformation and routing. The tools are needed to guarantee service-level agreements, to deal with the multitude of expected and unexpected dependencies among components, and to keep interconnected components up and running.

The needs have spawned such vendors as Actional, Amberpoint, Digital Evolution, Blue Titan, DataPower, Forum Systems, Sarvega, seeBeyond, webMethods, Westbridge and others.

Users also will be challenged in taming the ever-growing size of

XML messages, which on average are 10 times larger than equivalent binary coding, and can quickly clog network infrastructure and applications.

Users say those and other issues will need to be considered when retrofitting legacy applications with Web services interfaces.

One lead architect for a large financial services company who asked not be identified, says mainframes aren't ready for the loose coupling of an SOA.

"The reason you can get 95% usage out of a mainframe is that there is very little slack on the mainframe. The reason you can do that is that everything is on schedules, but when you come from a distributed world it is not on a schedule."

The company is adding an identity management service to its SOA to control access after some users had written programs that automatically tapped the Web service to extract entire mainframe databases "one record at a time," he says.

"When you talk about SOA, the business people say 'Great, it will make things easier. Plug and play reuse,'" says David Mendler, director of XML Web services marketing for Microsoft. "But the IT pro guys typically aren't as excited. On its face it looks terrifying. A distributed system has no central point of control. It makes you think of operations in a totally different way."

**NEXT WEEK:** In Part 2 of our look at service-oriented architectures, users who have deployed SOAs share their dos and don'ts.

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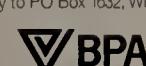
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## BackSpin

Mark Gibbs



# Real IT and fake accounts

**R**evision Department: Since my Backspin column of last March ([www.nwfusion.com/DocFinder/4457](http://www.nwfusion.com/DocFinder/4457)) I have had time to reflect.

I have pondered the oneness of the Internet, the eternal packet that transcends all routers and the Zen of spam. And I have realized one crucial thing: Computer monoculture is unavoidable.

There's no way that any real IT organization can afford to create an IT infrastructure that isn't a monoculture. If they did so — if they created some mixture of Macs and Windows and Linux — they would go broke trying to keep it all running.

The bottom line is that standards are the cornerstone of IT: The goal is based on standard applications running under standard operating systems that have standard configurations where everything can be audited and every action authenticated. That's it. There is no other way to do it.

OK, on with the news.

A staggering number of Web sites now require you to have some kind of account with them. The reasons for this range from the site attempting to understand its readership to preventing spammers and other miscreants from loading the system with their crud and building mailing lists for spamvertising campaigns.

A new service has appeared that is bound to attract lots of attention and quite possibly some legal heat: [bugmenot.com](http://bugmenot.com), which uses the tag line "Common sense isn't."

The idea is really simple: When you enter the URL of a site that requires an account to gain access, bugmenot either returns an account name and password or, if an account for that site hasn't been entered, suggests that you provide the details for one.

I tried looking up accounts for *The Washington Post* and several other sites and there they were, names and passwords for each that worked just fine. If this idea takes off, there will be scores of sites providing the same service, which is easy because all it requires is a simple database lookup.

Already there's a Firefox plugin (DocFinder: 4458) that accesses the bugmenot database. With the plugin installed, all you have to do is right-click in a logon form on a site and have a name and password automatically filled in.

However, the consequences could be profound. Widespread use of this ploy will make site statistics and demographic analyses even more error-prone than they already are.

So what could site owners do? If they are brave, they could start using credit card verifications in much the same way the pornography community uses them for age verification. The downside of this

is that there's a huge cost and liability associated with storing credit card details and verifying them.

Site owners could start mining the account swapping sites and blocking the exposed accounts. Of course, the swapping sites will up the ante by making mining them require human beings to gain access.

But the tools could get even more interesting. Imagine combining a free utility such as Roboform with a distributed peer-to-peer version of the bugmenot database and you've got a major assault on the value of Web registration systems.

What this whole story illustrates is the growing tension between consumers and content providers. Consumers will accept the conditions on your offerings as long as they see value. When that value is not apparent, they view the conditions almost as an insult. They then do one of three things: They don't bother to sign up, they sign up but with bad feelings, or they go out of their way to lie when they sign up.

The current generation of Internet consumers appears to favor signing up with bad feelings. The next generation will, I believe, be far more ready to use tools like bugmenot. The challenge for Web sites is to either offer real value or forget about collecting personal data when they don't need it.

*Real IDs only to backspin@gibbs.com.*

## NetBuzz

News, insights, opinions and oddities



By Paul McNamara

### A food store first

This newspaper quote from Freshdirect co-founder Jason Ackerman was

so amusingly cheeky that I made a note to give the online grocer a call: "For the most part the demand has been greater than our ability to supply," Ackerman told the Associated Press earlier this year. "When you deliver great food people love the convenience of it. If we delivered crappy food people wouldn't be as excited."

A bit obvious, perhaps, but it sure explains why CrappyFood.com went belly-up. It also goes a long way toward explaining why online groceries, a market segment given up for garbage not long ago, are today enjoying a second helping of critical acclaim and investor interest. Online food stores still generate less than one-half of 1% of the total revenue in the grocery world, according to Jupiter Research, and won't hit 1% until 2008. But we're talking about a \$2.4 billion "niche" that's expected to grow 42% annually between now and then — no small potatoes. New York-based Freshdirect claims 100,000 active customers after a mere two years of pushing produce in the Big Apple.

"Consumers have absolutely integrated us as part of their lifestyles," Ackerman told me. "It's sticky, it's working."

It's also simple, if somewhat counterintuitive. Freshdirect employs about 1,100 people and operates out of a single facility from which it processes and ships custom-packaged fresh food and pre-packaged items. The key is that the company buys directly from farmers and has its own employees butcher, prep and wrap, thus cutting out middlemen and costs.

"The whole premise behind the business was to take the inefficiencies in the way that food is managed and use technology to create real physical advantages on processing and controls on the food," Ackerman says. "Almost all of our time is spent on building what is really like a Dell model, which is a just-in-time, made-

to-order system. When you do that for fresh food — food that needs some level of processing and the shelf lives are short — you create a unique opportunity to reduce your waste and improve your quality."

That orders are placed online is important in that it allows for a just-in-time production model, but being online isn't what drives Freshdirect's success, according to Ackerman.

"We've never really viewed this as an Internet business. . . . At the end of the day, the online convenience is not where we think we compete," he says. "In New York, you've got four players doing online business, so it's really about who went out there with the best food store."

And what do customers think?

"They're awesome," says Johnna Till Johnson, a Manhattan resident who writes *Network World's Eye on the Carriers* column. "You can find what you're looking for from practically any angle — type of food, brand name, food category. Once you find the food, you can drill down and get calorie counts, cooking tips, and lots and lots of preparation options."

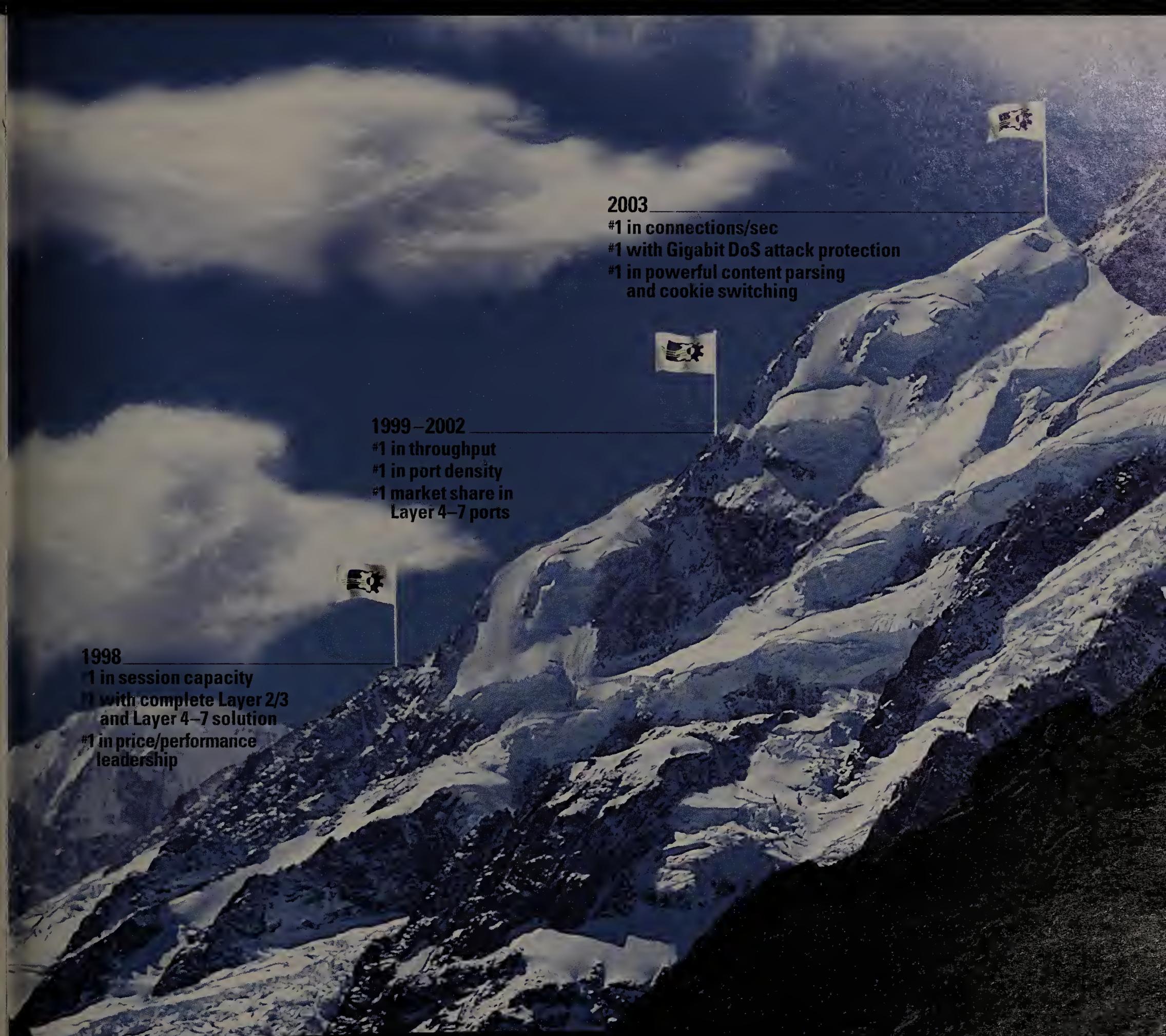
"They run a pretty tight ship. They store your contact information and credit card, and you can log on [password-protected] and place standing orders for stuff. You can specify when you'd like it to be delivered — what day, what time, within a two-hour block."

Sounds yummy.

Surprisingly enough, half of Freshdirect customers still use pokey dial-up connections to place their orders, a fact which in and of itself seems to suggest a high level of loyalty and satisfaction.

Ackerman acknowledges that Freshdirect's model is labor-intensive and requires a highly skilled workforce, but he's confident that it can be exported to "the top 20 cities in the country and be effective on delivery."

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